This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

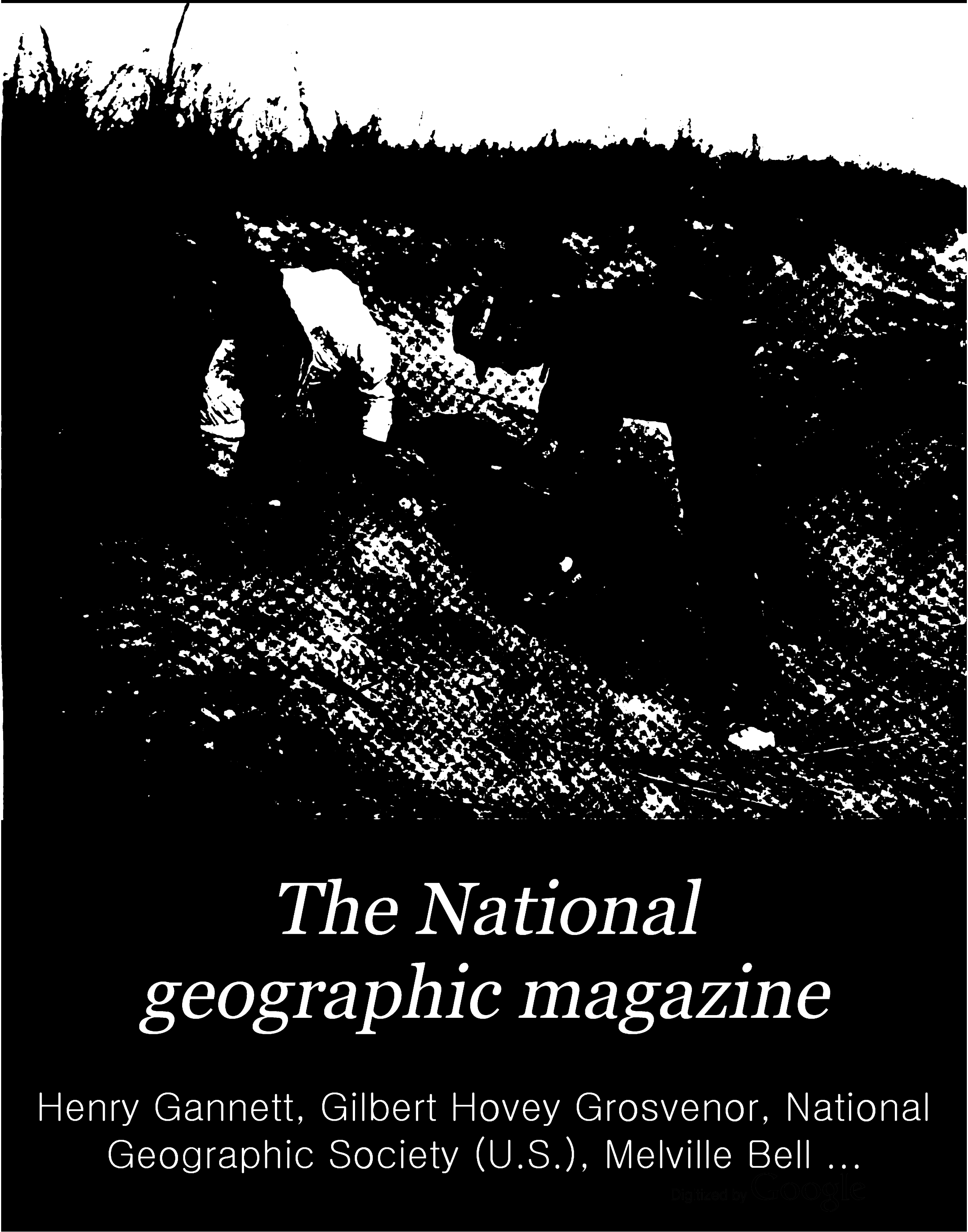
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`



The National geographic magazine

Henry Gannett, Gilbert Hovey Grosvenor, National Geographic Society (U.S.), Melville Bell ...

Geog 148.1

Harvard College Library

FROM THE FUND OF

E. PRICE GREENLEAF

OF QUINCY

Established 1887

THE
NATIONAL GEOGRAPHIC MAGAZINE

AN ILLUSTRATED MONTHLY

Editor
GILBERT H. GROSVENOR

Associate Editor
JOHN OLIVER LA GORCE

Contributing Editors

A. W. GREELY
Arctic Explorer, Major Gen'l U. S. Army
C. HART MERRIAM
Member National Academy of Sciences
O. H. TITTMANN
Superintendent of U. S. Coast and Geodetic Survey
ROBERT HOLLISTER CHAPMAN
U. S. Geological Survey
WALTER T. SWINGLE
ALEXANDER GRAHAM BELL
DAVID G. FAIRCHILD
In Charge of Agricultural Explorations, Dept. of Agriculture
HUGH M. SMITH
Commissioner, U. S. Bureau of Fisheries
N. H. DARTON
FRANK M. CHAPMAN

Vol. XXVI—July-December, 1914

COPYRIGHT 1914 BY

THE NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D. C.

BOUND JUN 1 1915

WASHINGTON, D. C.
PRESS OF JUDD & DETWEILER, INC.
1914

CONTENTS

Page

Hunting with the Lens, by HOWARD H. CLEAVES 1

Young Japan, by ELIZA R. SCIDMORE 36

Explorers of a New Kind, by L. O. HOWARD, Chief of the Bureau of Entomology, U. S. Department of Agriculture 38

The Need of Conserving the Beauty and Freedom of Nature, by CHARLES W. ELIOT, President Emeritus of Harvard University 67

The Unique Island of Mount Desert, by GEORGE B. DORR, ERNEST HOWE FORBUSH, and M. L. FERNALD 75

A Book of Monsters, by DAVID and MARIAN FAIRCHILD 89

Experiences in the Grand Canyon, by ELLSWORTH and EMERY KOLB 99

The Cape Cod Canal, by Commodore J. W. MILLER 185

Statistics of Populations, Armies and Navies of Europe 191

The France of Today, by Major General A. W. GREELY, U. S. Army 193

Belgium: The Innocent Bystander, by WILLIAM JOSEPH SHOWALTER 223

The Foreign-born of the United States 265

The Remarkable Growth of Europe During 40 Years of Peace, by O. P. AUSTIN, Secretary of the National Geographic Society 272

The German Nation 275

Hungary: A Land of Shepherd Kings, by C. TOWNLEY-FULLAM 311

England: The Oldest Nation of Europe, by ROLAND G. USHER, Professor of History, Washington University 393

Young Russia: The Land of Unlimited Possibilities, by GILBERT H. GROSVENOR, Director and Editor, National Geographic Society 423

Life in Constantinople, by H. G. DWIGHT 521

Where Adam and Eve Lived, by FREDERICK and MARGARET SIMPICH 546

Mystic Nedjef: The Shia Mecca, by FREDERICK SIMPICH 589

Impressions of Asiatic Turkey, by STEPHEN VAN RENSSELAER TROWBRIDGE 598

Henry Gannett, President of the National Geographic Society, Biography of, by S. N. D. NORTH 609

The Most Historic Lands on Earth 615

INDEX FOR VOL. XXVI (JULY-DECEMBER), 1914

(ENTRIES IN CAPITALS REFER TO ARTICLES)

"A"

Page

- A BOOK OF MONSTERS 89
  - Caterpillar, An unedible (highly magnified), Unfit food for bird or insect, illus. 96
  - Dragon-fly, A (highly magnified), illus. 95
  - Grasshopper, The, King (highly magnified), illus. 97
  - Horse-fly, Green-headed (highly magnified), illus. 90
  - Insect friends and foes 91
  - Katydid, The (highly magnified), illus. 93
  - Robber fly, A (highly magnified), illus. 94
  - Spotted vine chafer, The (highly magnified), illus. 92
  - Unique insect powers 98
- Aleppo,
  - Text 599
  - Illus. 600
- Antwerp,
  - Looking north along the city's docks, illus. 250
  - Quay Van Dyck, illus. 251
- Arabian,
  - Coffee-house leisure, illus. 588
  - Family, illus. 584
  - Harem 569
  - Humor 559
  - Villages 574, 575, 576, 582
  - Woman and her eunuch servant 569
- Arab Women,
  - Harem life of 569-580
  - In the desert,
    - Tribal life of 580-585
- Asiatic Turkey (see Turkey, Asiatic).
- Austin, O. P.,
  - The remarkable growth of Europe during 40 years of peace 272
- Austria-Hungary,
  - Outline map of 392

"B"

- Babel, Tower of, "located,"
  - Text 563
  - Illus. 566
- Babylonia, Lower,
  - The old order passing 560
  - Typical Arab villages, illus. 575, 576
- Babylonian scenes, illus. 570, 578, 587
- Bagdad,
  - Antiquities, Trade in 559
  - Approach to 546
  - Bazaars of,
    - Text 556
    - Illus. 561
  - Climate of 562
  - Daily life in 561
  - Date boil, The 562
  - Diplomatic sentinels at 552
  - Eden, The Garden of, near Bagdad,
    - Text 546, 560
    - Illus. 581
  - European life in 561, 562
  - Harem of, Within a 569-580
  - How rare old rugs are made 559
  - Humor of 559
  - Irrigation projected for country surrounding 561
  - Military scenes from, illus. 562, 563, 564, 565
  - Mosque of Sheik Abdul Kadir, Bagdad, illus. 568
  - People of, changed 556
  - Principal street of, illus. 553
  - Religious (Biblical) interest of 567
  - Rugs of, preparing them for age 559
  - Street scenes in, illus. 553, 554, 557
  - Tigris steamer, A, illus. 547
  - Walled-up gate,
    - One of Bagdad's ancient portals, illus. 560
  - "Watch-tower for the Powers" 552
  - Water-front of, illus. 551
  - Women of,
    - Text 567, 569, 573, 574, 580, 585
    - Illus. 569, 584

Page

- Baku,
  - Natives of, illus. 505
- Balkans, New,
  - Map of August Insert
- Banding wild birds, illus. 21, 22
- Bedouin superstitions 585
- Bedouin women 580, 585
- "Bee-hive" village, A, Arabian, illus. 582
- Belgium,
  - Antwerp, Scenes in, illus. 250, 251, 252
  - Bruges, Scenes in, illus. 240, 241, 242
  - Brussels, Scenes in, illus. 244, 245, 246, 247, 254
  - Cheap living in 229
  - Commerce and industries of 253
  - Congo, The story of 259
  - Constitution of 227
  - Diversity of tongues in 223, 227
  - Dogs of,
    - Text 239, 243
    - Illus. 228, 229
  - Folk-types, illus. 256, 257, 258
  - Foreign business of 253
  - Fortress at Dinant, illus. 236
  - Ghent, Scenes in, illus. 230, 232, 233, 235, 238
  - History of 253, 259
  - Judiciary of 243
  - Legislature of, its composition 227, 228
  - Living, Cost of, in 229, 243
  - Louvain, Scenes in, illus. 248, 249
  - Malines, Scenes in, illus. 224, 225, 226, 231
  - Migration from 243
  - Popular habits 234
  - Railway fares in 243
  - Size, Comparisons of 223
  - Succession, Royal, of 227
  - Suffrage laws of 228, 229
  - Wages in 234
  - Women of 227, 234, 239
- BELGIUM, THE INNOCENT BYSTANDER 223
- Beetles, Introduction of, to check gipsy-moth and brown-tail moth 38
- Birds,
  - Duck, Wild, black, illus. 19
  - Hawk, "Red-shoulder," illus. 7, 8, 9
  - Heron, illus. 6, 22
  - Gull, Great, black-backed, illus. 10, 11, 13, 14, 15, 22
  - Gull, Laughing, illus. 20
  - Kildeer, illus. 17
  - Osprey, illus. 31, 32, 33
  - Plover, Piping, illus. 5
  - Sandpiper, spotted, illus. 6
  - Tern, Common, illus. 23, 24
  - Tern, Royal, illus. 21, 25, 26, 27
  - Woodcock, illus. 28
- Bird migrations, American 81
- Bird reservations in the United States 31, 33, 34
- Bird station needed at Mount Desert Island 83
- Biography of Henry Gannett,
  - President of the National Geographic Society 609-613
- Bismarck memorial, Hamburg, illus. 264
- Boat types, Euphrates and Tigris Rivers,
  - Goofah,
    - Text 546
    - Illus. 549, 551, 555, 571
  - Kelek,
    - Text 546
    - Illus. 548, 551
- Bosphorus, Castles of, illus. 542, 543
- Brides, "Perennial," of Nedjef 598
- Brick factory near Nineveh, illus. 577
- Bridal Veil Falls, Grand Canyon,
  - Text 102
  - Illus. 100
- Bright Angel Trail, Colorado,
  - Views of 128, 129, 130, 131, 132, 133
- Bright Angel Trail to Needles, California,
  - Text 177-184
  - Illustrations along the way 170, 171, 172, 173, 174, 175, 176, 178-180, 181, 182

Page

- Bruges,
  - Chapel of the Holy Blood, illus. 241
  - Cloth Hall and its belfry,
    - Longfellow's celebrated "Belfry, old and brown," illus. 242
  - Street, A typical, in, illus. 240
- Brussels,
  - Cathedral of, illus. 244
  - Porte de Brussels,
    - Sole remaining part of old fortifications, illus. 246
  - Procession of judges and justices in,
    - At the funeral of the late King Leopold, illus. 254
  - View over the city,
    - Showing the Palace of Justice, illus. 245
  - Town Hall and market-place of, illus. 247
- Budapest,
  - Text 346-366
  - Illus. 378, 379-380
- Burma, Ragoon,
  - A mountain of rice, illus. 420

"C"

- Canal, Cape Cod, The 185
- Canyons of Colorado 99
- CAPE COD CANAL, THE 185
  - Belmont, August,
    - His connection with 186
  - History of the project 185, 186
  - Map of, outline 186
  - Significance of 190
  - Topography of 187, 190
  - Views along, illus. 188, 189
- Castles,
  - European,
    - Dinant, At: Beside the Lesse, illus. 237
    - Ghent, At: Belonging to Counts of Flanders, illus. 232
    - Neuschwanstein: Typical German mountain castle, illus. 293
    - Sztrecsno: Hungary, illus. 315
    - Tahneck: On the Rhine, illus. 297
    - Trencsen, At: Hungary, illus. 312
  - Guarding the Bosphorus, illus. 542, 543
- Cataract Creek Canyon 101-115
  - Bridal Veil Falls, The, illus. 100
  - Mooney Falls, illus. 101
  - "No royal road" in 115
  - Rapid, A typical, in, illus. 156
  - Views along, illus. 103, 104, 105
- Cathedrals,
  - Amiens, France,
    - Illus. 194
  - Antwerp, Belgium,
    - Interior, illus. 252
  - Berlin, Germany,
    - Illus. 288
  - Brussels, Belgium,
    - Illus. 224
  - Cologne, Germany,
    - Illus. 276
  - Ghent, Belgium,
    - St. Bavon, illus. 235
  - Malines, Belgium,
    - St. Rombold, illus. 224
  - Moscow, Russia,
    - Cathedral of the Assumption, illus. 435
    - Cathedral of Archangels, illus. 436
    - Cathedral of Our Saviour, illus. 441, 468, 469, 498
    - Cathedral of St. Basil's, illus. 452, 493
  - Petrograd, Russia,
    - St. Isaac's, illus. 508, 509
  - Strassburg, Germany,
    - Illus. 285
- Cedar of Lebanon, illus. 605
- Central Caucasus, Types of people in, illus. 514, 515
- Circassians, illus. 487
- Clear Creek Falls, Colorado, illus. 138
- Cleaves, Howard H.,
  - Hunting with the lens 1
- Court of Arbitration, The Hague, inception of 471
- Conservation,
  - Problems of, Some 67, 69, 71
  - Efforts for, Some 71, 73
- CONSERVING THE BEAUTY AND FREEDOM OF NATURE IN MODERN LIFE, THE NEED OF 67

Page

- CONSTANTINOPLE, LIFE IN 521
- Constantinople,
  - Carnegie library at 545
  - Cemetery at,
    - One of the largest in the world, illus. 541
  - Climate of 545
  - Cooks of 527
  - Cosmopolitanism of 523
  - Defenses of, illus. 542, 543, 544
  - Folk in 523, 527, 531, 532
  - Folk types, illus. 524, 530, 532, 533, 534, 535, 540
  - Guilds (labor unions) of 533, 536, 538
  - Hamal, or porter, of, illus. 533
  - Harbor of, illus. 526, 527, 533, 535
  - Leisure of 539
  - Living conditions in 526
  - Mecca pilgrims, illus. 530
  - Mosque architecture, detail, illus. 536, 537
  - Mosque of Sultan Ahmed, illus. 528, 529
  - Moving, household, in 538
  - Progress of 521
  - Revolution of 1908,
    - Young Turk movement 521
  - Sport in 545
  - Street scenes in, illus. 530, 534, 539
  - Streets of, unnamed 523
  - War scenes from, illus. 522, 524, 525, 531
- Costumes, Foreign,
  - Arabian,
    - Illus. 547, 553, 569, 588
  - Dutch,
    - Illus. 502
  - French,
    - Illus. 196, 197, 201, 204
  - German,
    - Illus. 290, 292
  - Hungarian,
    - Illus. 313, 332, 338, 347, 348, 349, 368, 369, 370, 371, 387, 388
    - Text 334
  - Japanese,
    - Illus. 415
  - Russian,
    - Illus. 457, 462, 487, 488, 491, 494, 496, 497, 514, 515, 517
  - Turk,
    - Illus. 524, 530, 534

"D"

- Date boil, The 562
- Devotees, Mohammedan, illus. 596
- Dogs,
  - Belgian draught 239, 243
- Dorr, George B.,
  - The unique Island of Mount Desert 75
- Dutch fisherman and family, illus. 502
- Dwight, H. G.,
  - Life in Constantinople 521

"E"

- Eden, Garden of,
  - Text 560, 567
  - Illus. 581
- Education,
  - France, In 207
  - Germany, In 299
  - Japan, In 36
  - Russia, In 455, 459, 463
- Eiffel Tower, Paris, illus. 218
- Eliot, Charles W.,
  - President Emeritus of Harvard University,
    - The Need of Conserving the Beauty and Freedom of Nature in Modern Life 67
- Elm,
  - Types of,
    - (For which New England is famous), illus. 68, 72
- England,
  - Children of, illus. 397, 404
  - Geography of,
    - Protective advantages in 402
    - Strategic advantages in 408, 409, 410
  - Greenwich Observatory,
    - Great clock at, illus. 407
  - Invention in 411
  - Manufacture,
    - Monopoly of 413

Page

- Maritime development of.................... 410
- Military,
  - Illus. 263, 394
- Motto of,
  - "England Over All".................... 405
- Political and spiritual unity of..... 402, 405, 406
- Racial unity of.................... 396
- Religious toleration in, The story of........ 399
- Scenes in rural,
  - Illus. 398, 401, 403, 409, 411
- Strength of,
  - Economic 406, 408
  - Foreign policy,
  - "Unity against the foreigner".......... 405, 406
    - Political unity.................... 399, 400
    - Religious unity.................... 405
    - Self-consciousness 405, 406
    - Territorial unity.................... 395
- Territorial unity of.................... 395
- Trafalgar Square,
  - War crowd in, illus.................... 412

Euphrates River,
- Scenes along, illus.... 574, 575, 578, 579, 581, 586

Europe,
- Growth of, during 40 years of peace........ 272
- Populations of,
  - Statistical analysis of fluctuations in.... 272, 273, 274

European statistics,
- In connection with map of Europe and New Balkan States, insert, August.

EXPERIENCES IN THE GRAND CANYON... 99

EXPLORERS OF A NEW KIND.................... 38

"F"

Fairchild, David and Marian,
- A Book of Monsters.................... 89

Fernald, M. L.,
- The Unique Island of Mount Desert........ 75

Forbush, Ernest Howe,
- The Unique Island of Mount Desert........ 75

FOREIGN-BORN OF THE UNITED STATES, THE 265
- Cities, foreign populations of,
  - Table 271
- Immigration,
  - Tables and diagrams........... 267, 270, 271
- Number and proportions of.................... 265
- Origin of,
  - Table showing.................... 266
- Where immigrants have settled,
  - Shown by nationalities, diagrams.... 268, 269

Fortress of Metz, illus.................... 286

France,
- Amiens cathedral, illus.................... 194
- Breton,
  - Piety, illus.................... 212
  - Fishermen, illus.................... 213
- Children of,
  - Industrial status of.................... 203, 205
  - Juvenile reform.................... 203
  - Illus. 201, 202, 206, 207
- Female labor in.................... 199
- Industrial insurance system.................... 205
- Literature of.................... 210
- Peasants of,
  - Text 198, 199
  - Illus. 196, 197, 199, 201, 204, 208, 209, 211
- Pensions, Old age, of.................... 206
- Recreations in.................... 209
- Rue de la Paix, Paris, illus.................... 219
- Scenes in, illus...... 195, 200, 202, 215, 216, 217, 218-219, 220, 221, 222
- Schools of.................... 207
- Spirit of.................... 214
- Thrift in.................... 210
- Women of.................... 199, 200, 201, 203
- Workmen of.................... 205

Funeral procession in Moscow, illus.................... 454

"G"

Galilee, Sea of, The, illus.................... 606

Gannett, Henry,
- President of the National Geographic Society,
  - Biography of.................... 609-613
  - Photograph of.................... 611

Garden of Eden,
- Text 560-567
- Illus. 581

GERMAN NATION, THE.................... 275

Germany,
- Agriculture of.................... 275, 277
- Cathedral at Cologne, illus.................... 276
- Cathedral at Berlin, illus.................... 288
- Cathedral at Strassburg, illus.................... 285
- Children of,
  - Text 299
  - Illus. 282, 283
- City scenes,
  - Illus. 280, 281, 294, 300, 301, 303, 304, 305, 306, 308
- Country scenes,
  - Illus. 290, 291, 293, 296, 297, 298, 310
- Education in.................... 299
- Eisenach,
  - "Luther's birthplace," illus.................... 301
- Folk of,
  - Types 279, 292, 295, 302
- Foreign trade of.................... 282
- Fortress at Metz, illus.................... 286
- Frankfort-on-the-Main,
  - The Romer, illus.................... 308
- Harbor of Hamburg, illus.................... 278
- Living conditions in.................... 287
- Metz, Cliff near, illus.................... 296
- Naval affairs of.................... 287
- Police regulations of, Some.................... 289
- Railroads of.................... 284
- Rotenburg, illus.................... 280, 281, 294
- Strength of,
  - Some comparisons.................... 275
- Stuttgart,
  - Market-place in, illus.................... 306
- Trade of,
  - Carrying 284
  - Foreign 282-283
- Wage-earners of.................... 294, 295, 299
- Wars of.................... 307

Ghent, Scenes in,
- Count of Flanders' ancient castle, illus...... 232
- Flower garden in,
  - Text 49
- Fort guarding the Passage du Rabot, illus... 238
- Picturesque square in, A, illus.................... 233
- St. Nicholas Church,
  - One of the oldest buildings in the city, illus. 230

Gold, Russian deposits of.................... 481

Goofah,
- Boat-type, An Arab.................... 546

Grand Canyon, Colorado,
- Atmospheric effects in,
  - Text 115, 119
  - Illus. 109, 110, 111, 112
- Bright Angel Creek, illus.................... 136, 139
- Cliff formations in, illus.................... 138, 139
- Desert view of.................... 122
- Highest sheer walls in, illus.................... 180
- Map of, outline.................... 153
- Mountain sheep, Grand Canyon, illus....... 125
- Rapids of the Colorado.................... 134
- Rock formations in.................... 122, 124
- Sand-storms in.................... 134
- Storm effects in,
  - Text 115-119
  - Illus. 114, 116, 117
- Views of,
  - Illus. 108, 109, 110, 111, 112, 113, 114, 116, 118, 135

Granite Gorge, illus.................... 173, 174, 175, 178

Great Head,
- Boldest headland on the American coast, illus. 70

Greely, A. W.,
- Major General, U. S. A.,
  - The France of Today.................... 193

Grosvenor, Gilbert H.,
- Director and Editor, The National Geographic Society,
  - Young Russia,
    - The Land of Unlimited Possibilities. 423

"H"

Havasu (see "Cataract Creek Canyon").

Helsingfors, Finland,
- Harbor of, illus.................... 510

Page

- Howard, L. O.,
  - Chief, Bureau of Entomology, U. S. Department of Agriculture,
    - Explorers of a New Kind.... 38
- Humor, Arabian.... 559
- HUNGARY, A LAND OF SHEPHERD KINGS. 311
- Hungary,
  - Agriculture of.... 327
  - Amusements and customs of.... 334, 335
  - Arena at Pola, Austria-Hungary, illus.... 389
  - Budapest,
    - Text.... 346-366
    - Illus.... 378, 379
  - Children of, illus.... 338, 340, 345, 353, 362, 363
  - City scenes in,
    - Illus.... 324, 376, 377
  - Costumes of, illus.... 332, 338, 364, 365, 368, 369, 370, 371
  - Country scenes, illus.... 314, 316, 317, 318, 320, 321, 322, 337, 350, 351, 356, 358
  - Folk of,
    - Types, illus.... 313, 319, 323, 325, 331, 336, 339, 344, 345, 349, 352, 354, 355, 367, 375, 381
  - Gypsies of,
    - Text.... 342, 343
    - Illus.... 341, 342, 343, 344
  - Hunting scenes in, illus.... 382, 383
  - Magyar,
    - Original, The.... 327
    - Temperament.... 321-323
  - Map of.... 392
  - Parliament of,
    - Text.... 385-386
    - House, illus.... 380
  - Salt mines of, illus.... 383, 384, 385, 386
  - Salzburg, Austria,
    - Illus.... 390
  - Shepherds and cow-boys of, illus.. 328, 329, 330, 333, 335
  - Weddings in,
    - Text.... 335
    - Illus.... 346, 347
  - Women of,
    - Text.... 334
    - Illus.... 348, 359, 360, 361, 366, 372, 373, 374, 387, 388
- HUNTING WITH THE LENS.... 1
  - Banding with birds, illus.... 21, 22
  - Goldfish, Artificial, for bait,
    - Text.... 18, 26, 27, 28
    - Illus.... 30, 31, 32, 33, 34, 35
  - Nesting Island, in Lake George, illus.... 12
  - Owl, Stuffed, for bait,
    - Text.... 10, 12, 13, 17
    - Illus.... 7, 8, 9
  - Plover, Piping, experiments with,
    - Text.... 8
    - Illus.... 5
  - Reservations in the United States, Bird. 31, 33, 34
  - "Turtle crawl," A, illus.... 2, 3, 4

"I"

- Icons of Russia,
  - Sale of in Moscow, illus.... 461
  - Text.... 503
- Indians of Colorado,
  - Text.... 102, 107
  - Illus.... 100
- Insects (see "A Book of Monsters").
- IMPRESSIONS OF ASIATIC TURKEY.... 598

"J"

- Japan,
  - Children of,
    - Dress of.... 38
    - Games of.... 37
    - Good manners of.... 37
  - Most beautiful tree in, illus.... 56
  - Schools in.... 36
  - Illus.... 59, 60, 61, 62, 64, 415
- Japanese,
  - Children, illus.... 415
  - Garden, illus.... 418
  - Garden fete, illus.... 63
  - Flower gatherer, illus.... 64
  - Leave-taking, illus.... 57
  - Rooster, bred with tail-feathers 18 feet long, illus.... 419
  - Wedding feast, illus.... 58

"K"

Page

- Kazemain, The golden minarets of, near Bagdad, illus.... 572
- Kelek, Euphrates, boat-type.... 546
- Kolb, Ellsworth and Emery,
  - Experiences in the Grand Canyon.... 99

"L"

- Lebanon cedars,
  - Text.... 601
  - Illus.... 605
- LIFE IN CONSTANTINOPLE.... 521
- Lodore Canyon,
  - Text.... 148, 152
  - Illus.... 144, 145, 146, 147, 148, 150
- Louvain,
  - Street scene in, illus.... 249
  - Town hall of, illus.... 248

"M"

- Malines, Belgium,
  - Market day at, illus.... 225
  - Market-place in, illus.... 226
  - Porte de Bruxelles, illus.... 231
  - St. Rombold, Cathedral of, at, illus.... 224
- Manna.... 585
- Marble Canyon,
  - Text.... 162, 167
  - Illus.... 159, 160, 163, 164, 166
- Miller, Commodore J. W.,
  - The Cape Cod Canal.... 185
- Monsters, A book of.... 89
- Mosque architecture, details, illus.... 536, 537
- Mosque of Abraham, Urfa, illus.... 602
- Mosque near Kerbela, illus.... 591
- Mosque of Sheik Abdul Kadir, Bagdad, illus.... 568
- Mosque of Sultan Ahmed, Constantinople, illus.. 528
- MOST HISTORIC LANDS ON EARTH, THE.. 615
- Moths,
  - Brown-tailed,
    - Illus.... 40, 42, 52, 53
    - Text.... 48
  - Devastations by, illus.... 40, 41
  - Enemies of.
    - Text.... 65
    - Illus.... 44, 45, 46, 47, 51, 53
  - Gipsy,
    - Feeding habits of.... 45
    - How brought here.... 40
    - Illus.... 50
  - Parasites of, Importation of.... 40
- Mountain lion, A, illus.... 137
- Mount Desert Island,
  - Conserving the natural beauty of.... 77
  - Discovery of.... 75
  - Location of.... 75
  - Migratory birds at.... 81
  - Plant life of.... 83, 85, 87
  - Sea-gulls' home, illus.... 80
  - Somes Sound, illus.... 76
  - Views in, illus.... 80, 82, 84, 86, 88
  - Vista from, over the waters.... 78

"N"

- Napoleon in Moscow.... 445
- Nationality, Essentials of.... 395
- NEDJEF, MYSTIC, THE SHIA MECCA.... 589
- Nedjef,
  - Commerce and industry of.... 598
  - Desert trail to,
    - Text.... 593
    - Illus.... 592
  - Devotees in, illus.... 596
  - Establishment of.... 589
  - Graveyard of.... 590
  - Mosque of,
    - Said to be fabulously rich.... 597
  - "Perennial" brides of.... 598
  - Pilgrims to.... 589, 590
  - Underground chambers of.... 595
  - View of, illus.... 594
- North, S. N. D.,
  - Henry Gannett,
    - A biography of.... 609

"O"

Page
OLDEST NATION OF EUROPE, THE........ 393

"P"

Peter the Great,
  His studies and wanderings................ 442
  His reforms............................ 445
  Statue of, Petrograd, illus................ 504
Pictographs, Grand Canyon, illus............... 158
Pictorial shop signs.......................... 463
Populations,
  American, Growth of....................... 273
  European, Growth of.............. 272, 273, 274
  Oriental, Growth of....................... 274
  United States, Growth of.................. 273
  World, Growth of......................... 273
Preventive medicine.......................... 274
Priests, Russian,
  Illus. 463, 465
Prussia,
  Suffrage laws in.......................... 309
  Diet of.................................. 309

"R"

Rapids of the Colorado......................... 134
Reed huts on the Euphrates, illus................ 574
REMARKABLE GROWTH OF EUROPE DURING 40 YEARS OF PEACE, THE............ 272
Russia's friendship for United States........... 509
RUSSIA, YOUNG, THE LAND OF UNLIMITED POSSIBILITIES...................... 423
Russia,
  Agricultural people.......................... 453
  Area of, Comparisons........................ 423
  Baku, Natives of, illus...................... 505
  Bell, The largest ever built: Moscow, illus. 437, 438
  Bell tower in the Kremlin, illus............ 436
  Carts of, Typical, illus..................... 480
  Cathedral of the Assumption, Moscow,
    Illus. 435
  Cathedral of Our Savior, Moscow,
    Illus. 441, 469, 498
  Cathedral of St. Basil's, Moscow,
    Illus. 452, 493
  Cathedral of St. Isaac's, Petrograd,
    Illus. 508
  Children of,
    Illus. 447, 448, 459, 488
  Church of the Resurrection, Petrograd,
    Illus. 499
  City scenes in,
    Illus. 424, 460
  Cossacks of, illus.......................... 483
  Costumes of,
    Peculiar, illus......... 487, 490, 491, 492, 494
  Cotton,
    Production of........................... 486
  Country scenes in,
    Illus. 512, 513, 516, 518
  Court of Arbitration, The Hague,
    Inception of............................ 471
  Education in,
    Condition of............................ 455
  Fecundity in................................ 425
  Folk of,
    Types of, illus.... 443, 444, 455, 464, 478, 479, 487, 491, 497, 505, 514, 515
  Forests of.............................. 483-486
  Foreign business of......................... 471
  Funeral procession in Moscow, illus......... 454
  Gold deposits in............................ 481
  Golden horde's incursion into............... 428
  Government of............................... 471
  Helsingfors, Finland,
    Harbor of, illus......................... 510
  Icons of,
    Text 503
    Sale of, in Moscow, illus................ 461
  Inclusiveness of............................ 423
  Industries of............................... 486
  Ivan the Terrible,
    His destruction of Novgorod.............. 431
    Conquest of Siberia...................... 431
  Jews in..................................... 486
  Kremlin, The, Moscow,
    Views of, illus.... 429, 430, 432, 433, 434, 439
  Lutheran Church of St. Nicholas, Helsingfors,
    Illus. 511
  Medals of service in, illus................. 425
  Mineral wealth of........................... 475
  Monastery of Miracles, Moscow,
    Illus. 440
  Moscow,
    Text 428
    Illus. 428, 429, 430, 456, 468, 470, 488
  Napoleon,
    In Moscow................................ 445
    In retreat through Russia................ 446
    Lost cannon of, illus............... 450, 451
  Nizhni-Novgorod,
    Panoramas of, illus................. 472, 473
    Scenes in, illus.......... 474, 475, 476, 477
  Oil production in........................... 483
  Peasants of, illus.................. 494, 495, 500
  Peter the Great,
    His studies and wanderings............... 442
    His reforms.............................. 445
    Equestrian statue of, illus.............. 504
    Petrograd statue commemorating act of heroism which resulted in the death of,
      Text 445
      Illus. 484
  Prohibition in.............................. 503
  Petrograd, Scenes in,
    Illus. 482, 484, 485, 504, 505, 506, 507, 508
  Pictorial shop signs........................ 463
  Religiousness of............................ 503
  Romanov, A, chosen Tsar..................... 442
  Serfs of, Freeing the....................... 447
  Shrines and churches of,
    Text 503
    Illus. 427, 466, 458, 467, 477
  Sophia of Byzantium......................... 428
  Tatar,
    Admixture with Slavs of.................. 431
  Traffic policeman, Petrograd, illus......... 426
  Tsar of,
    Income of................................ 465
    Peace efforts of......................... 471
  Universities in............................. 463
  United States, Relations with............... 509
  Village life in............................. 453
  Vodka, Where it is sold, illus.............. 481
    Text 503
  Woman's position in......................... 459
  Women of,
    Illus. 446, 491, 492, 496

"S"

Sacred Icons,
  Sale of, Moscow, illus...................... 461
St. Basil's, Cathedral of, Moscow, illus.......... 493
St. Catherine's, Church of, Brunswick, illus...... 304
St. Isaac's, Cathedral of, Petrograd, illus....... 508
St. Nicholas, Church of, Ghent, illus............ 230
St. Nicholas, Church of, Helsingfors, illus...... 511
Saint-Sang, The Chapelle du Bruges, illus........ 241
Salt mines, Hungarian, illus....... 383, 384, 385, 386
Salzburg, Austria,
  Illus. 390
Scidmore, Eliza R.,
  Japan, Young................................. 36
Schloss Neuschwanstein, illus.................. 293
Schwabentor in Freiburg, illus................. 305
Seraievo, Bosnia, Capital of,
  Peasants of, illus........................... 388
  Girl of, illus............................... 387
Servian vender, illus.......................... 375
Siberia,
  Gold mines in................................ 481
  Immigration scenes in, illus........... 518, 519
  Wages in..................................... 481
  Women and girls of western, illus........... 517
Simpich, Frederick,
  Mystic Nedjef, The Shia Mecca............... 589
  Where Adam and Eve Lived.................... 546
Simpich, Margaret,
  Where Adam and Eve Lived.................... 546
Shia pilgrims.................................. 590
Showalter, William Joseph,
  Belgium, The Innocent Bystander............. 223
Slovak marriage,
  Text 335
  Illus. 346, 347

Page
Slovak women,
    In work-a-day clothes, illus. 360
Somes Sound, illus. 76
Sport in the Tatra Mountains,
    Bison hunting, illus. 383
Stillwater Canyon,
    Text 157
    Illus. 154, 155
Stilt-walkers,
    In France, illus. 211
Strassburg Cathedral, The, illus. 285
Stuttgart, Germany,
    A scene in, illus. 306
Sztrecsno, The castle of, illus. 315

"T"

Tekrit, City of,
    On the Tigris, illus. 583
Tigris steamers, illus. 547, 550
Townley-Fullam, C.,
    Hungary, A Land of Shepherd Kings 311
Trowbridge, Stephen van Rensselaer,
    Impressions of Asiatic Turkey 598
Turkey, Asiatic,
    Agriculture of 604
    Aleppo and its famous gardens, illus. 600
    Forest wealth of 601
    Historic significance of 599
    Map, Outline, of 614
    Mineral wealth of 603
    Scenes in, illus. 602, 606, 607, 608
    Travel, Difficulties in 603

"U"

Usher, Roland G.,
    Professor in Washington University,
        England, The Oldest Nation in Europe 393
United States, Foreign-born of the 265
UNIQUE ISLAND OF MOUNT DESERT, THE 75

"W"

War scenes from Europe *220, 221, 222, 255, 260, 261, 262, 263, 412, 522*
WHERE ADAM AND EVE LIVED 546

"Z"

Zobeida, Tomb of, near Bagdad, illus. 558

VOLUME XXVI
NUMBER ONE

AUG 4 1914
CAMBRIDGE, MASS.

THE NATIONAL GEOGRAPHIC MAGAZINE

JULY, 1914

◆

CONTENTS

16 Pages of 4-Color Work

Hunting with the Lens
WITH 47 ILLUSTRATIONS — HOWARD H. CLEAVES

Young Japan
WITH 11 ILLUSTRATIONS IN COLORS — ELIZA R. SCIDMORE

Explorers of a New Kind
WITH 15 ILLUSTRATIONS—4 IN COLORS — L. O. HOWARD

The Need of Conserving the Beauty and Freedom of Nature
CHARLES W. ELIOT

The Unique Island of Mount Desert
GEORGE B. DORR, ERNEST H. FORBUSH, M. L. FERNALD
WITH 11 ILLUSTRATIONS

A Book of Monsters
WITH 7 ILLUSTRATIONS — DAVID AND MARIAN FAIRCHILD

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D.C.

$2.50 A YEAR
25 CTS A COPY

NATIONAL GEOGRAPHIC SOCIETY

HUBBARD MEMORIAL HALL
AVENUE OF THE PRESIDENTS AT M STREET, WASHINGTON, D. C.

HENRY GANNETT . . . . PRESIDENT
O. P. AUSTIN . . . . . . SECRETARY
GILBERT H. GROSVENOR, DIRECTOR AND EDITOR
JOHN OLIVER LA GORCE . ASSOCIATE EDITOR
O. H. TITTMANN . . . . VICE-PRESIDENT
JOHN JOY EDSON . . . . . TREASURER
F. B. EICHELBERGER . ASSISTANT TREASURER
GEORGE W. HUTCHISON, ASSISTANT SECRETARY

BOARD OF MANAGERS

1912-1914

JOHN JOY EDSON
President Washington Loan & Trust Company

CHARLES J. BELL
President American Security and Trust Company

DAVID FAIRCHILD
In Charge of Agricultural Explorations, Dept. of Agric.

C. HART MERRIAM
Member National Academy of Sciences

O. P. AUSTIN
Statistician

GEORGE R. PUTNAM
Commissioner U. S. Bureau of Lighthouses

GEORGE SHIRAS, 3D
Formerly Member U. S. Congress, Faunal Naturalist, and Wild-Game Photographer

GRANT SQUIRES
New York

1913-1915

FRANKLIN K. LANE
Secretary of the Interior

HENRY F. BLOUNT
Vice-President American Security and Trust Company

C. M. CHESTER
Rear Admiral U. S. Navy, Formerly Supt. U. S. Naval Observatory

FREDERICK V. COVILLE
President of the Washington Academy of Sciences

JOHN E. PILLSBURY
Rear Admiral U. S. Navy, Formerly Chief Bureau of Navigation

RUDOLPH KAUFFMANN
Managing Editor The Evening Star

T. L. MACDONALD, M. D.

S. N. D. NORTH
Formerly Director U. S. Bureau of Census

1914-1916

ALEXANDER GRAHAM BELL
Inventor of the telephone

HENRY GANNETT
Chairman of U. S. Geographic Board

J. HOWARD GORE
Prof. Emeritus Mathematics, The Geo. Washington Univ.

A. W. GREELY
Arctic Explorer, Major Gen'l U. S. Army

GILBERT H. GROSVENOR
Editor of National Geographic Magazine

GEORGE OTIS SMITH
Director of U. S. Geological Survey

O. H. TITTMANN
Superintendent of U. S. Coast and Geodetic Survey

JOHN M. WILSON
Brigadier General U. S. Army, Formerly Chief of Engineers

To carry out the purpose for which it was founded twenty-three years ago, namely, "the increase and diffusion of geographic knowledge," the National Geographic Society publishes this Magazine. All receipts from the publication are invested in the Magazine itself or expended directly to promote geographic knowledge and the study of geography. Articles or photographs from members of the Society, or other friends, are desired. Contributions should be accompanied by an addressed return envelope and postage, and be addressed:

GILBERT H. GROSVENOR, EDITOR

CONTRIBUTING EDITORS

A. W. GREELY
C. HART MERRIAM
O. H. TITTMANN
ROBERT HOLLISTER CHAPMAN
WALTER T. SWINGLE
ALEXANDER GRAHAM BELL
DAVID FAIRCHILD
HUGH M. SMITH
N. H. DARTON
FRANK M. CHAPMAN

Entered at the Post-Office at Washington, D. C., as Second-Class Mail Matter
Copyright, 1914, by National Geographic Society, Washington, D. C. All rights reserved

HARVARD COLLEGE LIBRARY
AUG 4 1914
CAMBRIDGE, MASS.

VOL. XXVI, NO. 1 WASHINGTON JULY, 1914

THE NATIONAL GEOGRAPHIC MAGAZINE

HUNTING WITH THE LENS

BY HOWARD H. CLEAVES

With Photographs by the Author

NOT long ago one of our foremost ornithologists surprised me by remarking that, in his opinion, the work of bird protection in this country had been carried to an extreme! He pointed out that every great bird student, to his knowledge, had received his start by collecting eggs and making up study skins, but that the doing of these things lies beyond the reach of the present-day lad by reason of the strictness of the law.

I ventured to suggest that most of the famous ornithologists had made their beginnings before the era of the camera and the inexpensive field-glass, and that through these instruments as mediums the youth of the twentieth century can develop and maintain as deep an interest in bird life as his counterpart of a hundred years ago was led to do as a result of collecting.

As a matter of fact, this is an age of popular interest, and is getting to be one of conservation as well. The scientific specialist will ever be with us, and it will always be possible for him to secure necessary material for his intensive studies; but to open the way for every one in the land to destroy such quantities of wild creatures as might be deemed essential to develop within him the foundation for a scientific career would be a decided mistake. It were better to have fewer scientists and more birds.

Not, after all, that those truly interested in research have made any appreciable inroads on the bird population—although Audubon himself, in telling of his Florida episodes, says: "Each of us, provided with a gun, posted himself behind a bush, and no sooner had the water forced the winged creatures to approach the shore than the work of destruction commenced. When it at length ceased the collected mass of birds of different kinds looked not unlike a small haycock"—but laws which are left loose for a worthy purpose are certain to be taken advantage of by the greedy and unscrupulous.

This account and the accompanying pictures are submitted to the reader with the special purpose of emphasizing the truth of the already oft-repeated contention that it is more glorious and profitable to shoot birds through a lens than through the bore of a gun. The photographs are all of birds to be found in eastern North America, and might have been secured by any person with standard photographic equipment and a fair supply of energy and patience.

DIFFERENT TEMPERAMENT IN DIFFERENT BIRDS

The infinite variety of problems that must be met and overcome in securing photographs of wild birds under natural conditions should appeal to any one who has even a spark of ingenuity. The mode of procedure applied successfully to one subject may fail completely in the case

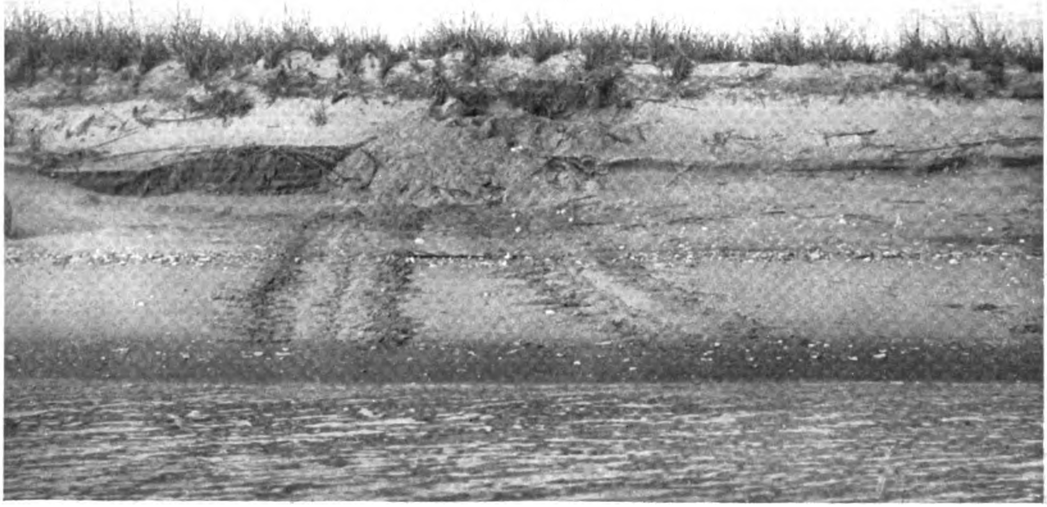


Photo by Howard H. Cleaves

A "TURTLE CRAWL": RACCOON KEY, BULLS BAY, S. C.

The female turtle drags herself up the beach above high-water mark after dark and digs a nest, where, according to the age and size of the turtle, from 75 to 200 eggs are deposited at a single laying.

of another. In this event a new course must be devised, and if this fails a third must be resorted to. It keeps one's wits on the move and *compels a close study of the habits and idiosyncrasies of the numerous birds which one meets;* and this, after all, is the true end to be gained and desired.

The difference of temperament in different birds and, moreover, in different individuals of the same species can best be illustrated, perhaps, by the following incidents:

The first was furnished by a yellow-billed cuckoo. She had her nest in a dense piece of woodland and placed near the top of a seven-foot bush, beneath a canopy of leaves, which, together with the shade of the forest, produced wretched light conditions for photography.

The time was late afternoon, and before the old bird came back to the nest, with the corpulent caterpillar of a hawk moth for the two young cuckoos, an electrical storm had obscured the sun entirely, and the rumblings of thunder made it apparent that camera, tripod, and all would soon have to be withdrawn or be drenched. But the young cuckoos were so far developed that they would be out of the nest by the following morning; so, if a plate were to be secured of the old bird beside her young, it was plain that it must be exposed within the next five minutes or not at all.

As this crisis was reached there occurred a movement at the far side of the bush and in an instant the old yellow-bill was standing at the edge of the nest, her tail drooping and head turned to one side. The shutter had been set for a time exposure and the thread leading to it was given a cautious pull.

At the opening click the old bird's head turned slightly; but from that moment until the remarkable exposure of 57 seconds (made necessary by the light conditions) was brought to an end by a second snap of the shutter spring, the cuckoo remained like a statue, and the resulting photograph was fairly satisfactory. Such a course could not have been followed with a less passive and apparently stupid bird than the cuckoo.

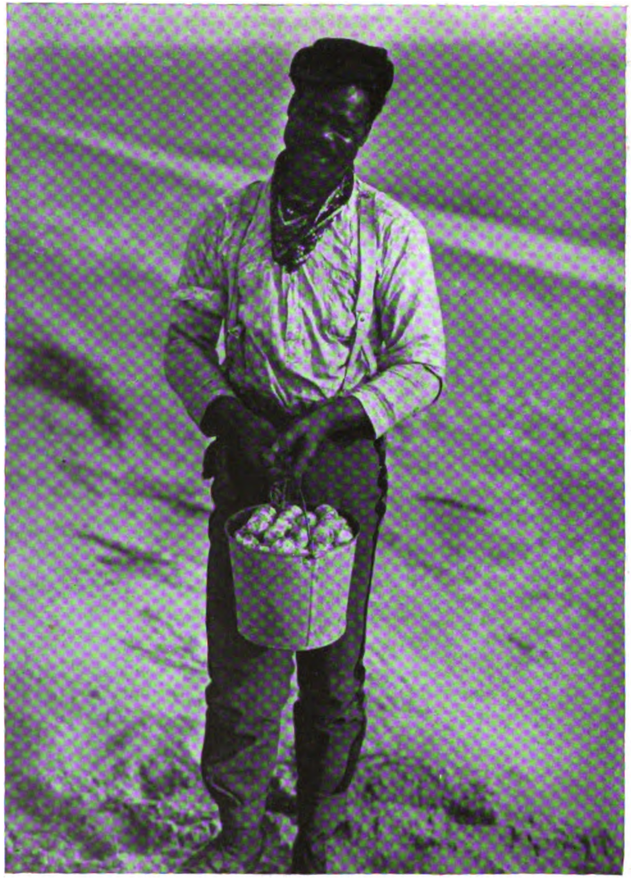
Photo by Howard H. Cleaves

GATHERING THE EGGS OF THE TURTLE

The turtle usually comes ashore in late May or early June and deposits her eggs in a hole she digs in the sand. She lays an enormous number, ranging from fifty to a thousand. according to her size, scoops back the sand, and returns to the sea, never again bothering about her eggs. If these are undisturbed, they hatch in from six to eight weeks. The baby turtles have to shift for themselves, and as soon as they are hatched they seek the water; but they are not willing to risk themselves in the open sea until they have developed their powers of navigation in some shallow inlet. In gathering the eggs, the exact location is first determined with a stick; then the egger digs through two feet of moist sand to the top layer of eggs. The sand is allowed to cling to the shell until the egg is about to be cooked.

My friend and fellow bird photographer, Mr. Clinton G. Abbott, had an experience with a cedar waxwing which illustrates this point. The nest was located in a shady place, necessitating the taking of time-exposures only. But the bird was nervous and turned her head each time at the click of the shutter, producing only a blur where her head should have been and spoiling plate after plate. The clever photographer overcame the difficulty by hanging an alarm clock beneath his camera. The waxwing soon became accustomed to the sound of this instrument and a perfect photograph was secured, for when the thread was pulled to make the exposure the "clicks of the shutter intermingled perfectly with the ticks and tocks of the clock."

One soon discovers that there is a vast variation in the dispositions of different individuals of the same species. In working with the fish-hawks on Gardiners Island we found that some returned to their eggs or young almost as soon as one had disappeared within his umbrella

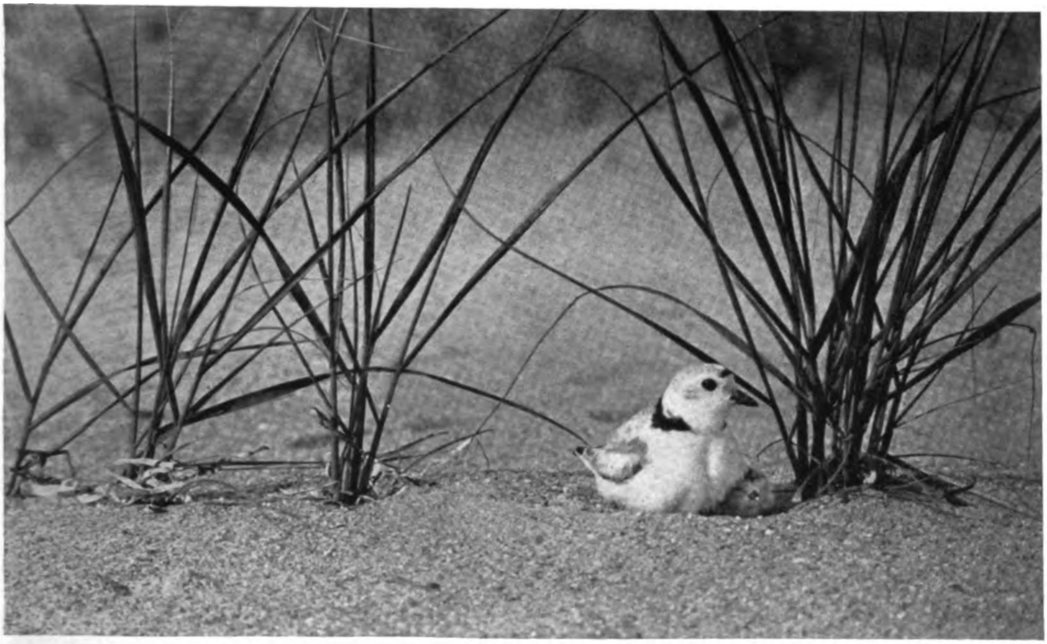


THE "HAUL" FROM THE TURTLE'S NEST (SEE PAGES 2 AND 3)
A TOTAL OF 136 EGGS

The native eggers peddle these turtle eggs in the streets of Charleston and Georgetown (S. C.) for 12 to 15 cents per dozen. They are considered a great delicacy by the natives, although the author found the flavor and texture to be quite disagreeable.

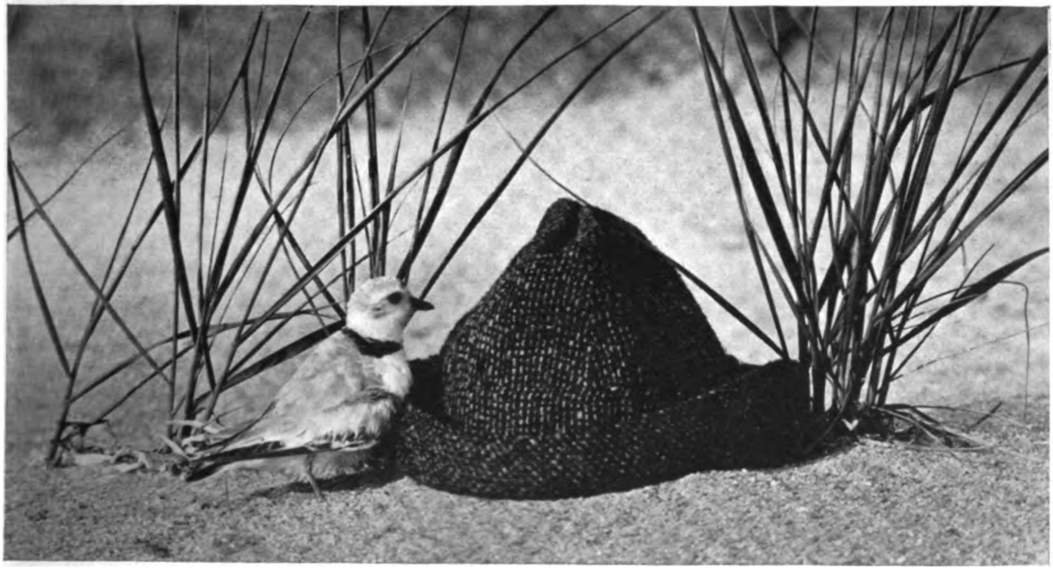
Photos by Howard H. Cleaves

There is still much work left for the Audubon societies and the Federal government to do. It is supposedly illegal to take the eggs of wild birds in Virginia, and yet each day for a month or two the eggers go off to the nesting islands and rob the nests of the sea-birds at Wreck Island, Va.



A PIPING PLOVER AND YOUNG "PERMITTED A SURPRISING DEGREE OF FAMILIARITY": MARTHAS VINEYARD, MASS.

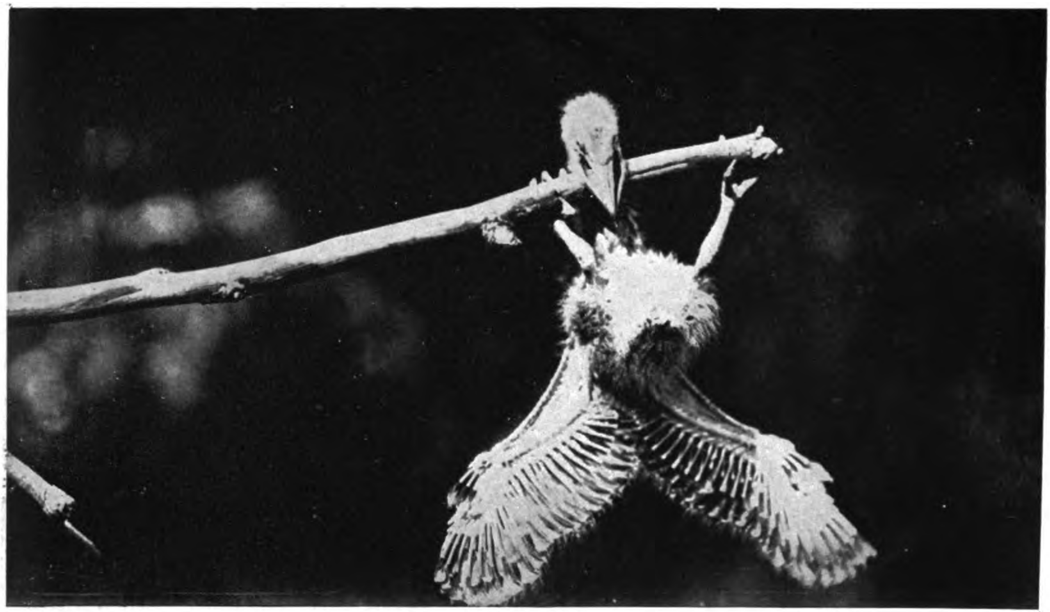
"By simply holding the camera in my hands and standing in the open, without concealment of any kind, I was able to photograph the bird as she approached her nest and brooded her newly hatched young" (see text, page 8)



PIPING PLOVER

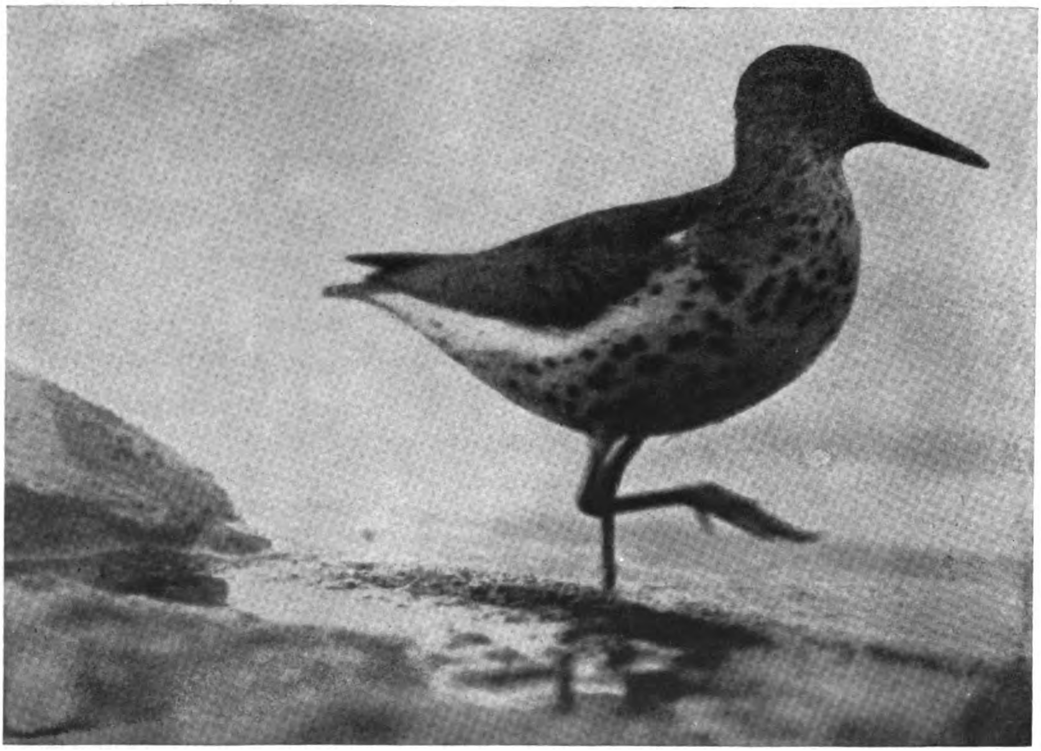
Photos by Howard H. Cleaves

"Proved herself to be the most devoted shore-bird mother that I had ever met. . . . I put my hat over the nest in the absence of the old plover, and was nearly convulsed by watching the 'circus' when she returned. . . . To hear her offspring and yet not be able to find or see them was quite inexplicable. Round and round the hat she ran, piping away in the meantime and now and again stopping to listen—a peep from a youngster being sufficient to start her off again" (see text, page 10).



A YOUNG GREEN HERON REGAINING HIS BALANCE ON A PERCH

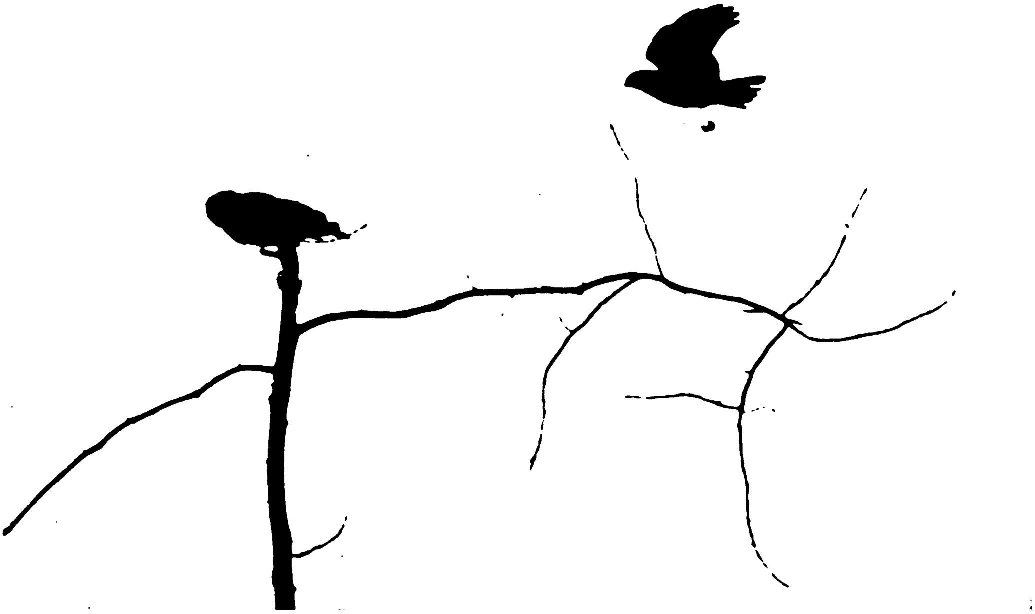
The dark patches at either side of his head are not the eyes, but the inside of the mouth, illustrating the spring-like character of the lower mandible



Photos by Howard H. Cleaves

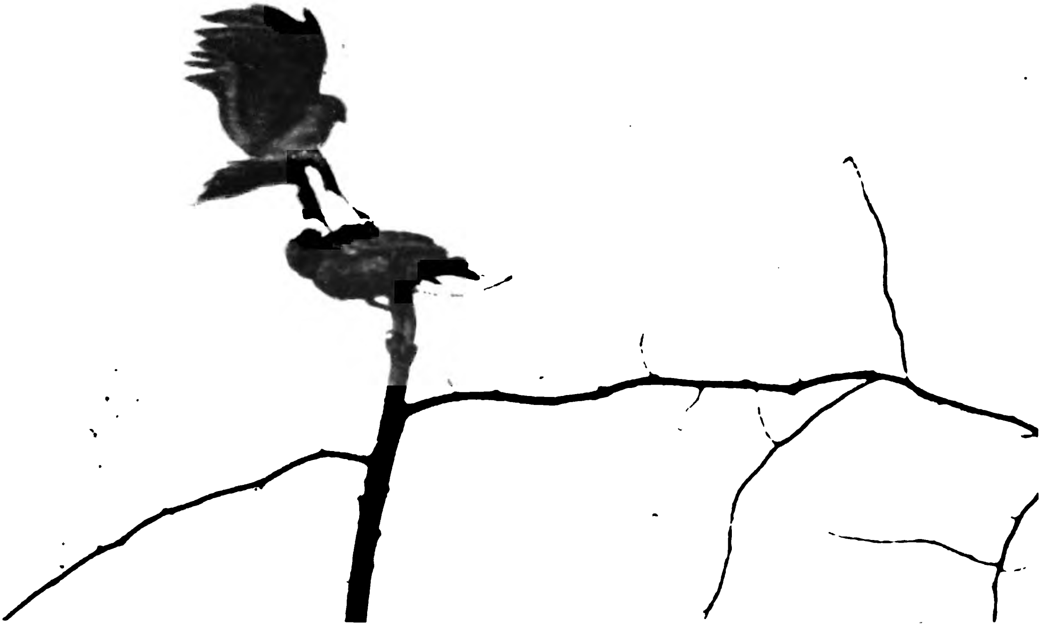
ONE OF THE "BEACH PATROL": SPOTTED SANDPIPER

A bird easily photographed near home—a common nester in the eastern United States



COMING IN SWIFTLY FOR A STRIKE FROM THE REAR, TALONS LOWERED READY FOR INSTANT ACTION

"It is only necessary, then, to secure a stuffed owl and place it on a perch in some open site in order to 'start something' in the bird world. And by concealing one's self near by in a blind, either of the umbrella variety or of some natural objects, such as corn-stalks, cat-tails, etc., the onslaught may be witnessed and photographed to advantage" (see text, page 12).



Photos by Howard H. Cleaves

A VICIOUS JAB, DEMONSTRATING THE REACH OF A HAWK'S LEGS

Here, as in most of the photos in this series, the owl happens to be in a horizontal position, into which shape he was knocked by the hawk

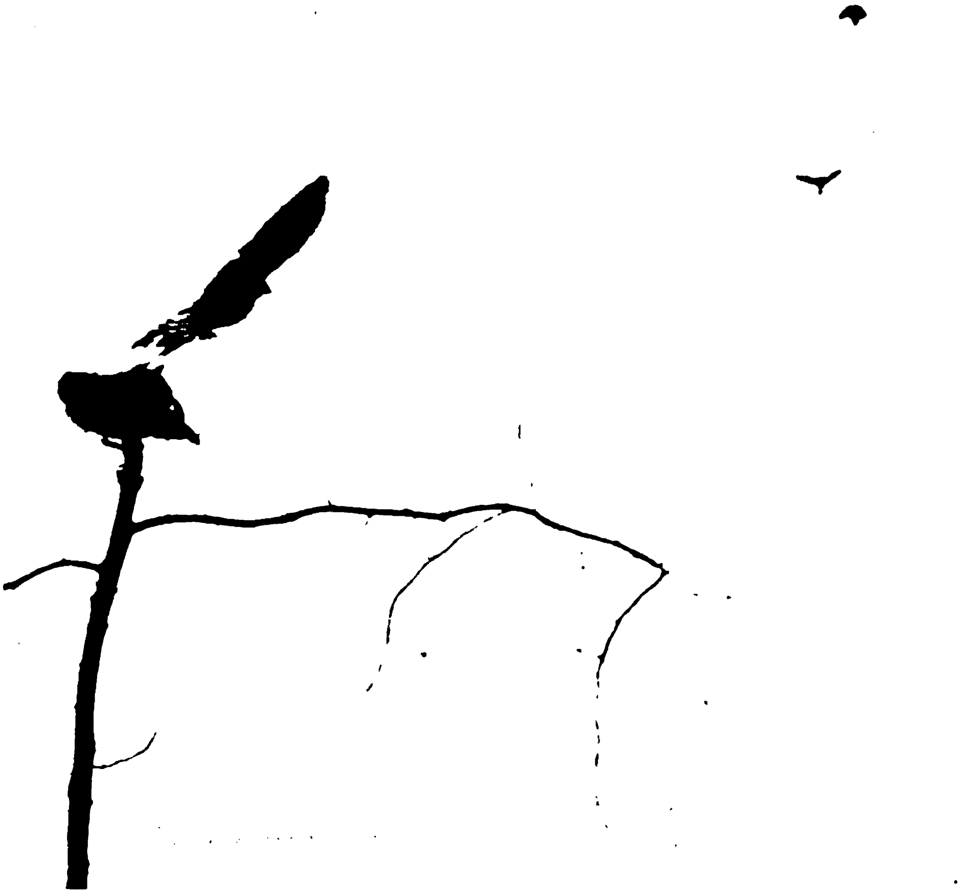


Photo by Howard H. Cleaves

THE RED-SHOULDER TEARING AWAY THE SIDE OF THE DECOY

The hawk's wings far forward at the "top" of a stroke and tail spread like a fan. Several *crows* show in the distance on the wing (see text, page 13)

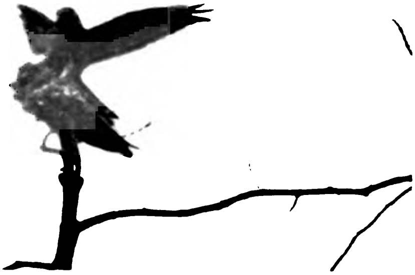
blind, while others, under precisely the same conditions, proved to be decidedly skeptical and required an hour or more to become reconciled. And now and then a hawk would be accommodating for a time, but would suddenly, without apparent reason, go off and refuse to return so long as the blind was near.

AMUSING EXPERIMENTS WITH A PIPING-PLOVER

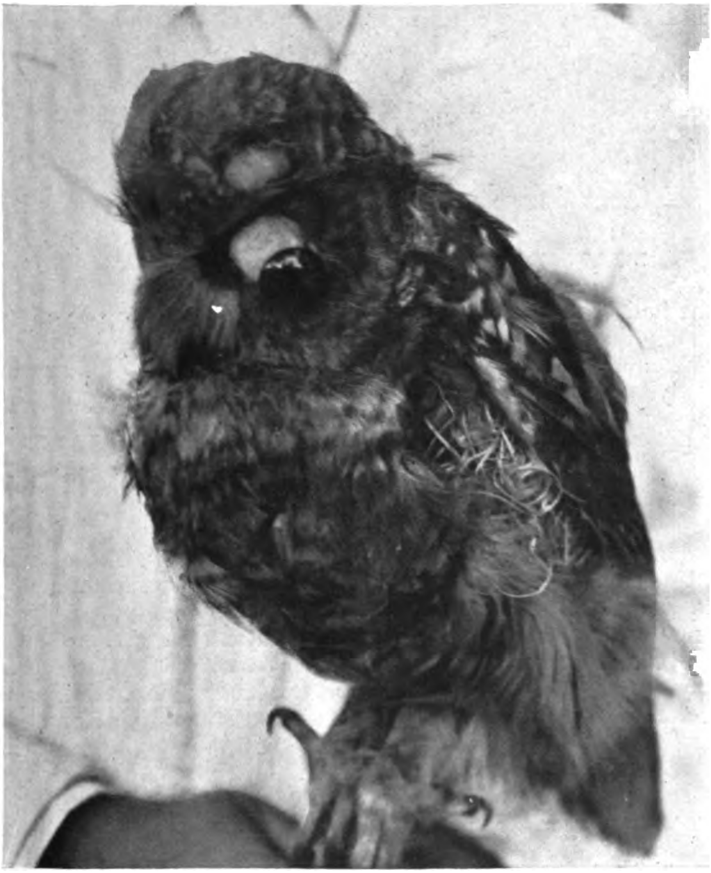
I recall working the better part of an afternoon trying to photograph an old piping-plover at her nest without success; but a couple of years later, on a different portion of the coast, I came upon a breeding piping-plover that went to the other extreme and permitted a surprising degree of familiarity. By simply holding the camera in my hands and standing in the open, without concealment of any kind, I was able to photograph the bird as she approached her nest and brooded her newly hatched young.

Not being content with this, I put my hat over the nest in the absence of the old plover, and was nearly convulsed by watching the "circus" when she returned.

She came unerringly back to the nest-site, which perhaps she recognized by the two familiar tufts of beach grass, one of which stood on either side of the nest; but here between them was a peculiar hillock that had grown up during the



AN ATTACK FROM THE SIDE



Photos by Howard H. Cleaves

THE MOUNTED BARRED OWL AFTER THE FRAY

Showing one eye hanging by shred of cotton, hole over the eye, and large rent in bird's side where excelsior is exposed

Photo by Howard H. Cleaves

BELLOWING OVER THE LAKE TO HIS MATE

brief time that she had been away. She came to a dead stop three inches from the brim of the hat and fluffed out her feathers indignantly, at the same time uttering a series of plaintive, piping whistles. This brought forth a muffled response from the young, and instantly the old bird became highly excited.

To hear her offspring and yet not be able to find or see them was quite inexplicable. Round and round the hat she ran, piping away in the meantime and now and again stopping to listen—a peep from a youngster being sufficient to start her off again.

At length the limit of patience seemed to be reached, for instead of circling longer about the obstruction the mother plover headed straight for it, pushing against the upturned brim with her breast and pecking at the material in the crown as if to remove the frightful object. Had there been any purpose in further extending the experiment I should not have had the heart to do it; but there was none, and the hat was removed from the nest and put in its proper place. The little piper had proved herself to be the most solicitous shore-bird mother that I had ever met.

USING AN OWL FOR BAIT

In seeking to procure bird photographs one should mark carefully the several factors which go to make up the bird's life—his food habits, time and manner of nesting, habitat in winter, and even his roosting place by night, his favorite perch by day (if he has one), and any peculiar whims, likes or dislikes, which happen to characterize his kind. Being possessed of an understanding of these things is identical with having success within one's grasp, if bird photography is the aim.

The simple knowledge, for instance, that hawks, crows, jays, and many other of the land birds are the sworn enemies of the owls is sufficient to put one in a position to conduct a highly entertaining experiment and one which is likely to produce a series of striking photographs. The reason that so many birds display

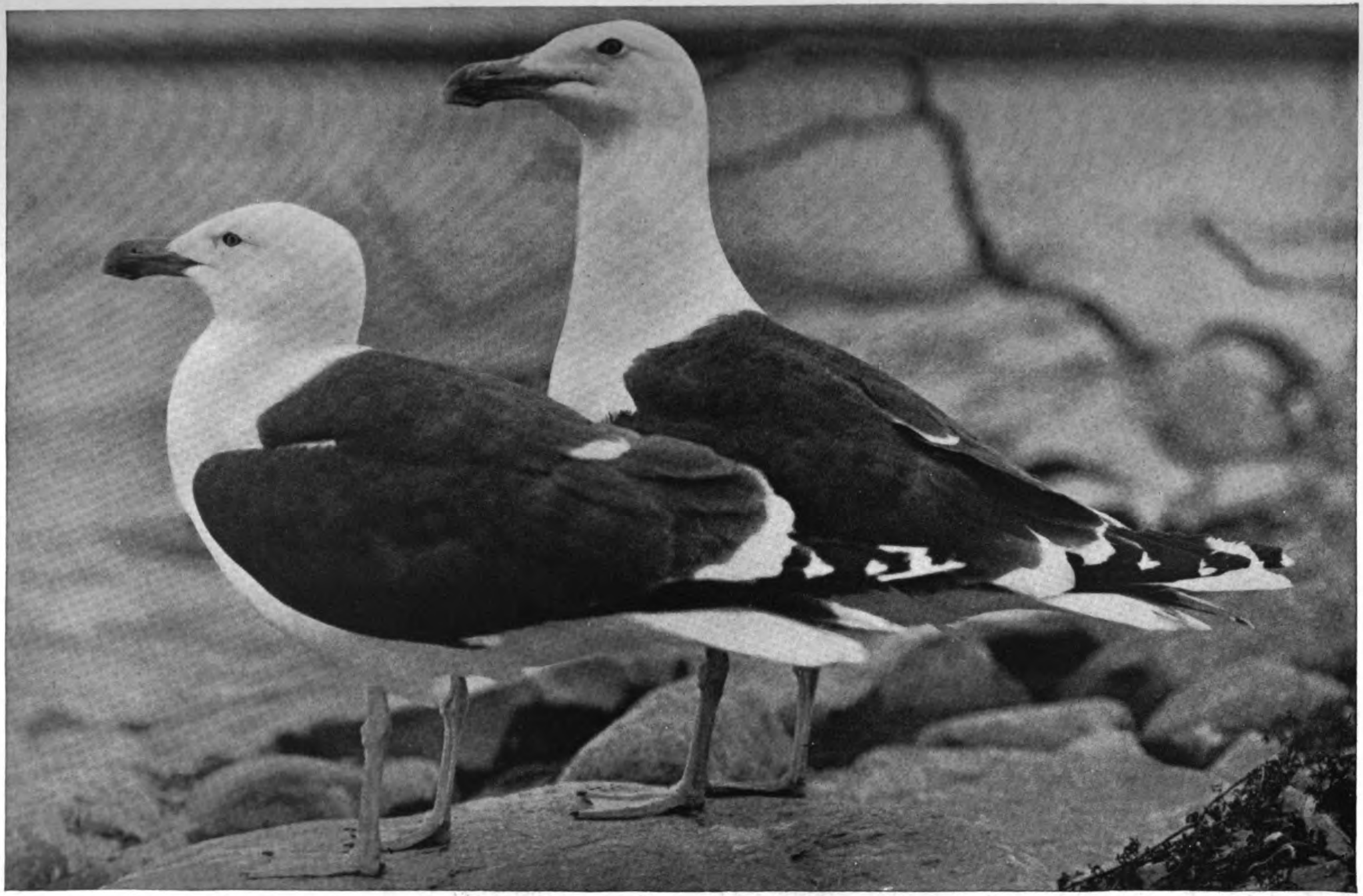


Photo by Howard H. Cleaves

GREAT BLACK-BACKED GULLS

Responding to the call, the other bird swims ashore and the pair stand together—the very picture of devotion and contentment. The old birds are very fond of each other

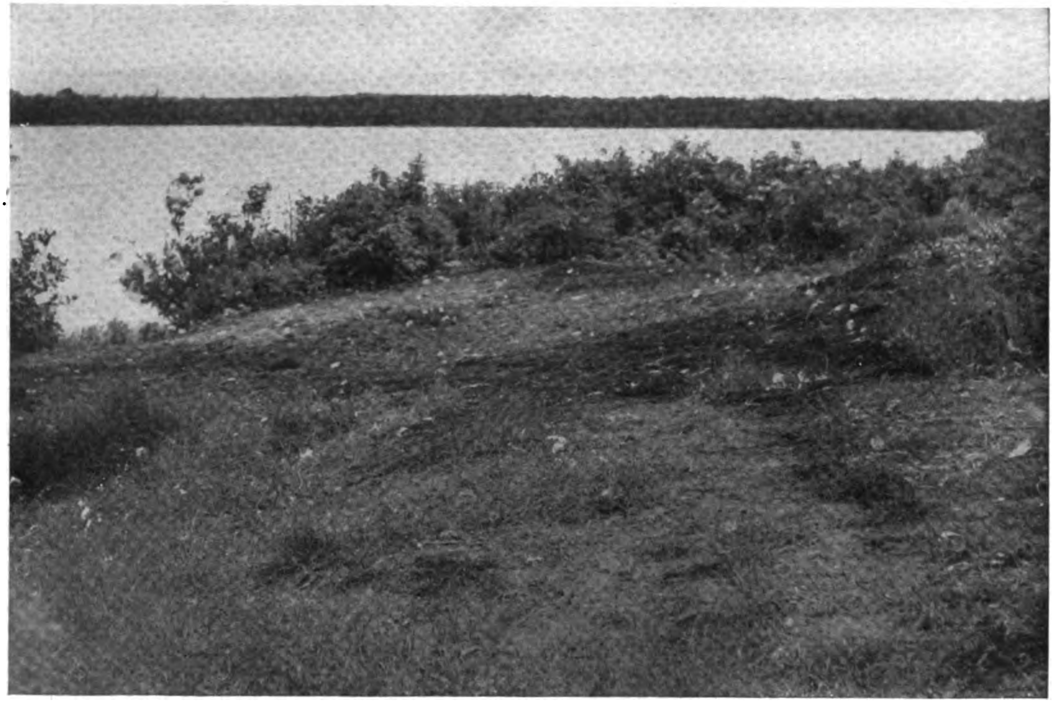


Photo by Howard H. Cleaves

THE "STAMPING GROUND" ON NESTING ISLAND IN LAKE GEORGE

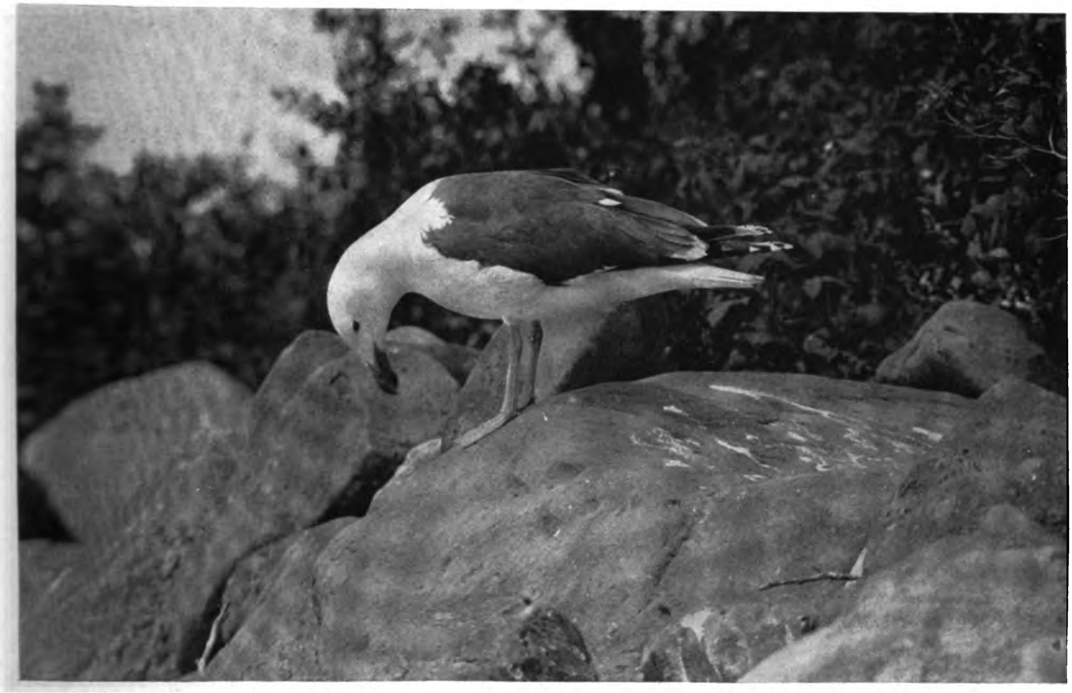
Here the gulls preen, feed their young, play, and sleep; also a trail (open space in bushes) where birds walk to and from the shore of the lake. The grass has been torn up by the roots and trampled under foot to keep the space clear.

this deep antipathy toward owls is probably that the nests of the former are occasionally rifled during the night by the latter, and at times the owl actually captures roosting adult birds, as their feathers found in the owl's nest-cavity or daytime retreat would testify.

It is no wonder, then, whenever an owl is so unfortunate as to be driven into a conspicuous position during the hours of light that some jay or crow or catbird should break loose with a series of terrible curses at the top of his lungs, and thus call together a bevy of irate confederates, who proceed to mob the poor bird of the night.

It is only necessary, then, to secure a stuffed owl and place it on a perch in some open site in order to "start something" in the bird world. And by concealing one's self near by in a blind, either of the umbrella variety or of some natural objects, such as corn-stalks, cat-tails, etc., the onslaught may be witnessed and photographed to advantage. An account of one or two of the writer's experiences with a mounted owl may be of interest.

I had been rambling through some marshes near the quaint old village of Keyport, New Jersey, and chanced to fall into conversation with an old fisherman who practiced taxidermy as an avocation. It is always well to look over the mounted specimens in possession of these isolated naturalists, for an Eskimo curlew, passenger-pigeon, or some other rarity may be found perched on a bureau, sideboard, or mantelpiece. There was just one bird in the fisherman's collection that interested me, and this was a barred owl which gazed out over the room from his position on top of the grandfather's clock. I wanted that owl. My host protested, saying that the specimen was falling apart, due to age, and asked if I wouldn't care for some other mount. But I insisted that I cared only for the owl, and at last its owner wrapped up the shabby-looking bird and apologetically accepted a dollar for it.



ADMIRING THEIR OWN FEET Photo by Howard H. Cleaves

This was a failing among the black-backs. It was often done after the preening was completed

With new eyes and a change in posture, the owl looked like the real, living thing; indeed, it worked almost too well when put out for the experiment. The dummy was perched prominently on a side hill, and with a companion I crawled beneath a canopy of pine boughs and gave a few scolding crow-calls to bring on the vanguard of the mob.

SAVAGE ATTACKS BY A HAWK

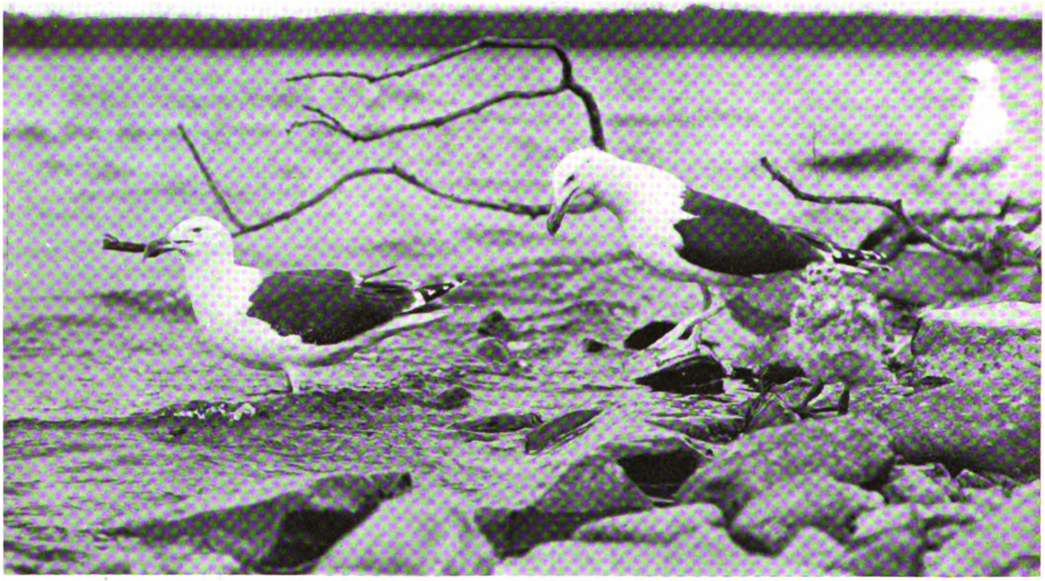
Like magic, fish-crows and common crows appeared on the scene, seeming to come from every point of the compass. They formed themselves into a croaking, cawing, swirling spiral and heaped their wrath upon the immovable barred owl on the side hill below.

Soon a red-shouldered hawk sailed smoothly out from a woodland to investigate the row. On sighting the owl he broke into rapid flight and went screaming at the head of the poor wretch.

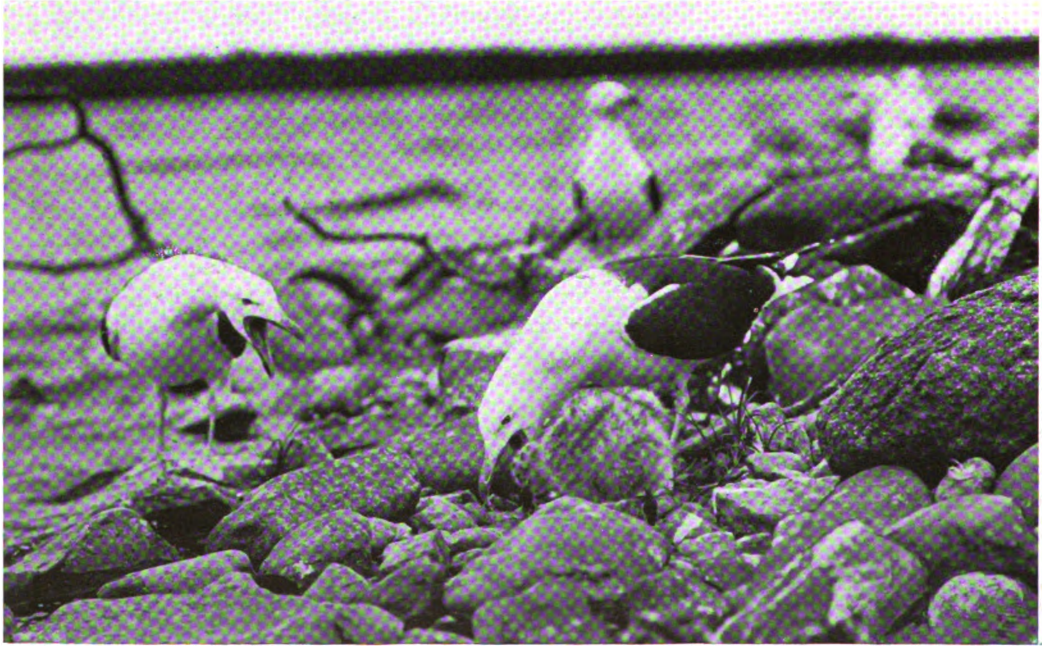
The uproar had reached its height and one photograph had been made when suddenly the hawk left the scene, and the crows, with a few sharp caws, faded into the distance. Looking from the blind, we perceived a bare-headed woman and her son racing toward us through thickets and brambles, and when we stepped forth and the woman came up to where we stood she demanded to know what we were doing to the birds. It was a striking demonstration of the spirit of bird protection, even though our sport had been spoiled for the day.

The next time the owl was put up in a spot more remote from human habitation and with uninterrupted success. A fish-crow was the first to give the alarm, and presently there were fully 75 crows in the air and in trees close by. Care had been taken to put the dummy only a hundred yards from the nest of a red-shouldered hawk, and the male bird, who had been noted scouting about the vicinity, was not long in being attracted by the rumpus.

Strangely enough, this very hawk a few minutes before had been harassed by the crows, but in the presence of the new enemy the black raiders forgot these former differences; in fact, they were quite willing to resign in favor of the red-



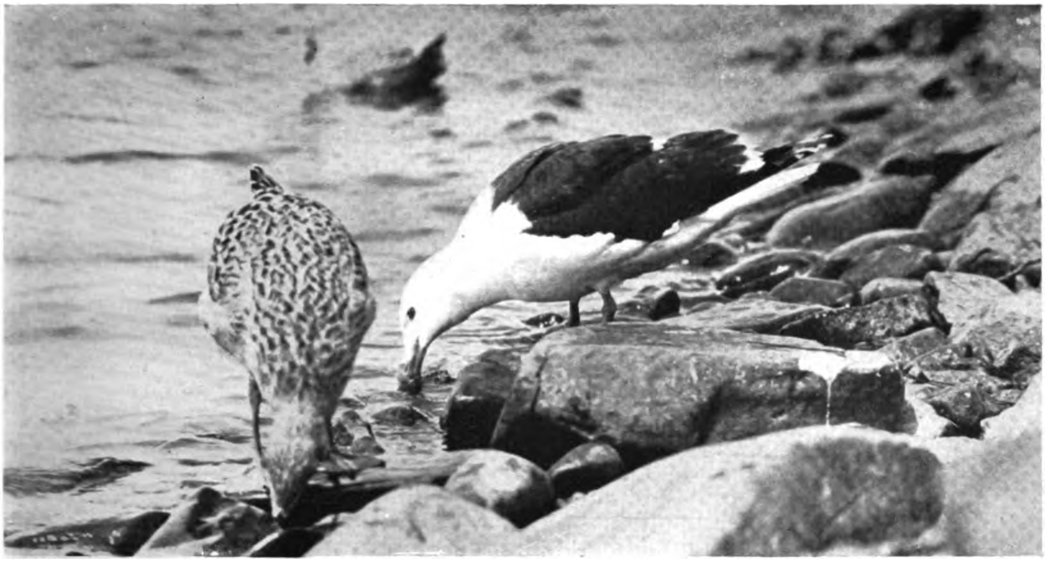
Apparently possessing a fondness for play, the old black-backs now and then pick up a cast feather, a dead fern, or other object and carry it about. Note bird on left. A downy youngster is following at the right (foreground), begging for food.



Photos by Howard H. Cleaves

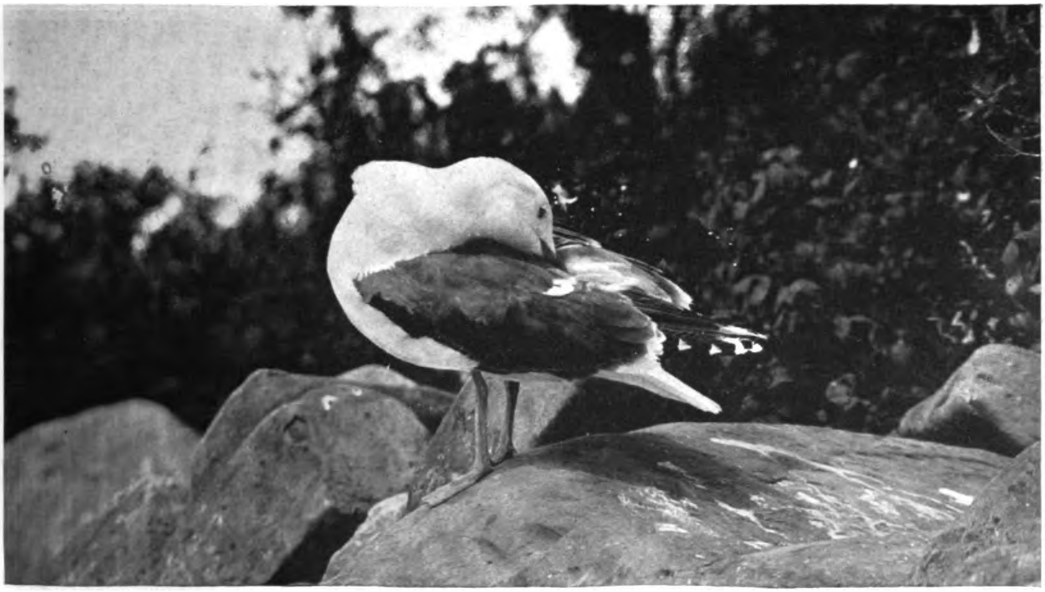
THE LONG-DELAYED MEAL IS AT LAST SERVED

Half-digested fish, captured in the Bay of Fundy or the ocean, are disgorged before the young gulls on the breeding islands in Lake George, several miles from the coast



THE OLD BIRDS ARE EXCEEDINGLY CLEANLY

They often wash their bills in the margin of the lake after delivering a meal. (Immature gull in foreground enjoying the remnants of a dainty morsel)



Photos by Howard H. Cleaves

BLACK-BACK PREENING RUMP FEATHERS, OR POSSIBLY REACHING FOR OIL SAC

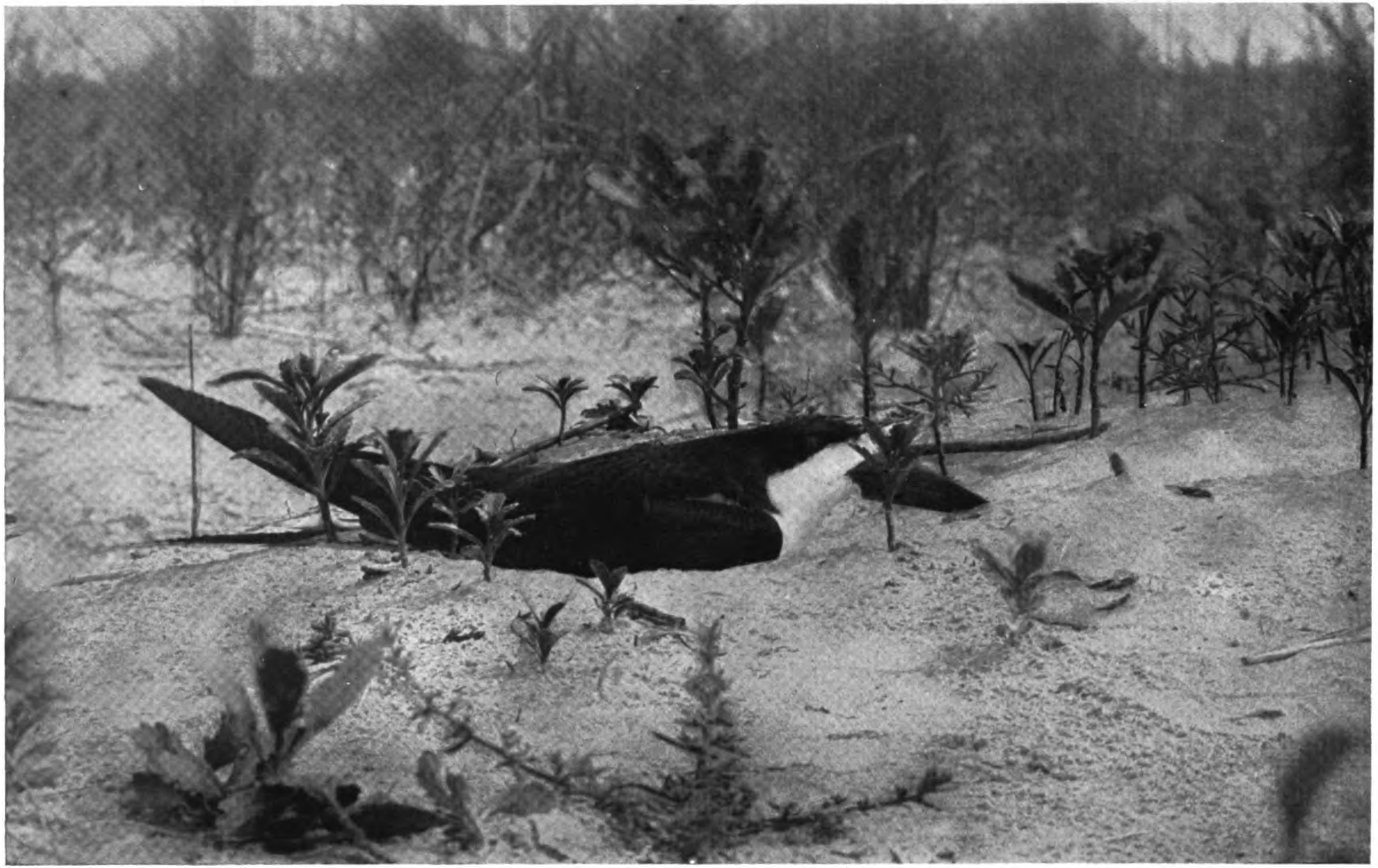


Photo by Howard H. Cleaves

SKIMMER ON HER NEST, RESTING HER BILL ON THE SAND. NOBODY SEEMS TO KNOW WHAT PURPOSE THIS HABIT ANSWERS

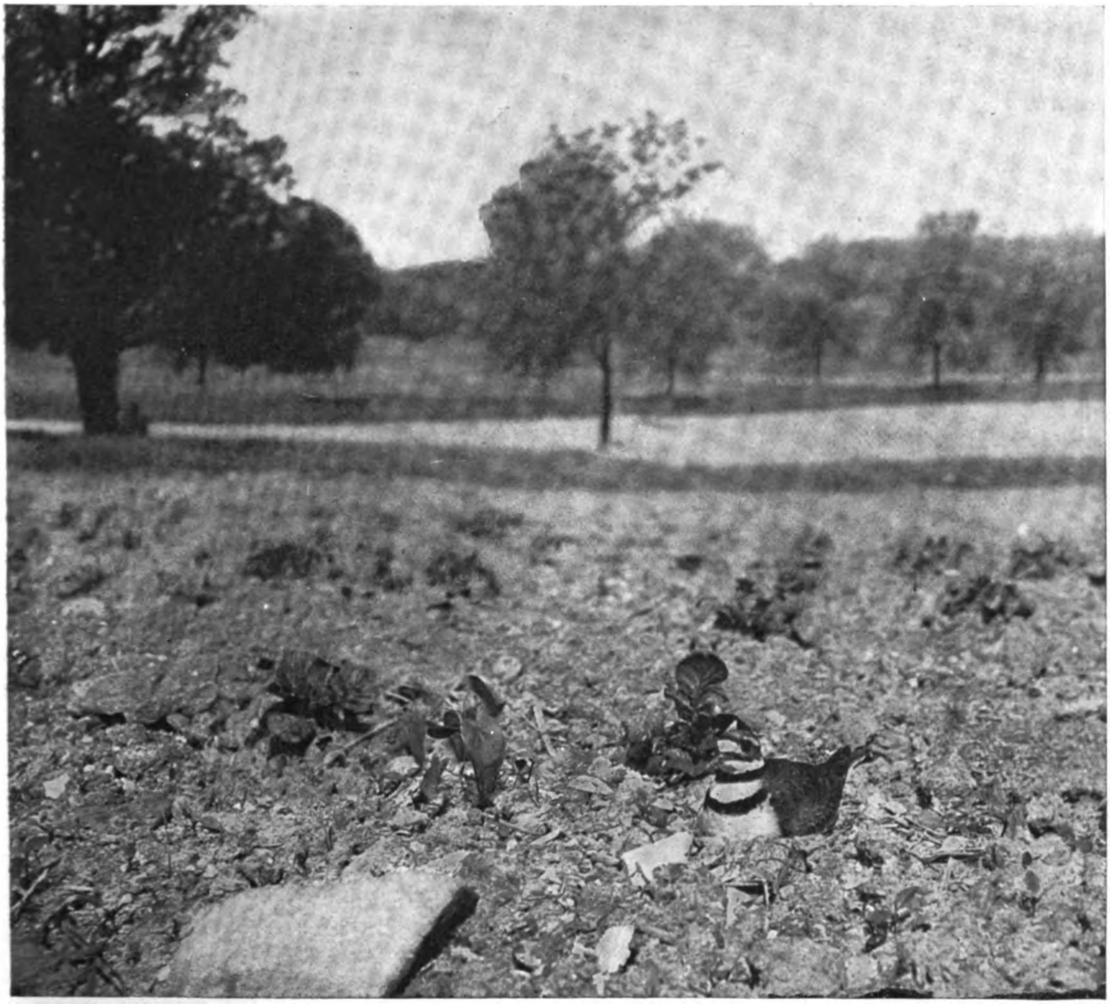


Photo by Howard H. Cleaves

KILLDEER: THE SPOT SELECTED FOR THE NEST WAS IN THE CENTER OF A POTATO FIELD

The photographer may be dimly seen under the tree in the background, where he was pulling the thread

shoulder and remained perched about on dead trees, looking on at the assault.

The whole thing was strikingly like an arena battle, with the crows cawing and croaking approval and encouragement from their points of vantage while the furious and screaming red-shoulder dashed in at the non-resisting owl in the pit below. First the dummy got a whack on the back of the head and then in the face, and at each blow the air was full of feathers (see pages 8 and 9).

The hawk selected two perches—one to the east and the other to the west of the owl—and back and forth between these he flew, striking viciously at the enemy each time as he passed, occasionally wheeling and delivering a double-barreled blow before going on to his lookout. The owl was now knocked into an almost horizontal position by a strike from the rear, and now bent into a normal, upright attitude by an attack from the front; and there he would sit, solemn and erect, ready for the next rush.

Whenever the hawk lagged the least

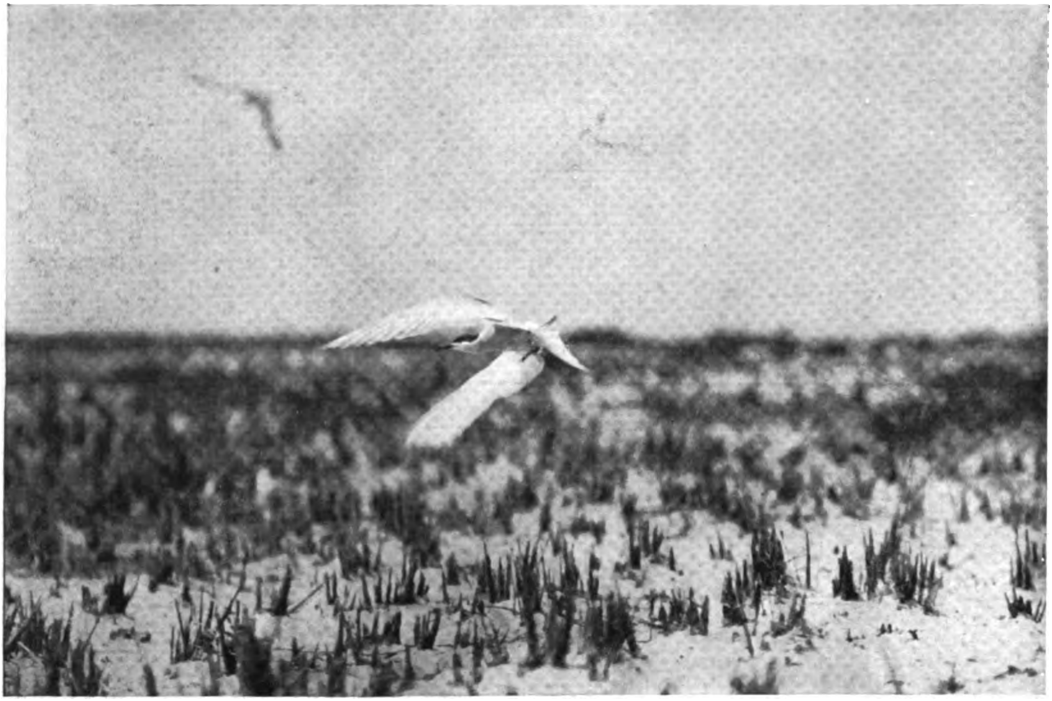


Photo by Howard H. Cleaves

A "SEA-SWALLOW," OR COMMON TERN, MAKING A QUICK TURN: MUSKEGET ISLE, MASS.

bit in his attack he was instantly spurred on by a hooting which to him apparently seemed to come from the owl, but which really came from within the umbrella blind near at hand.

During the siege, which lasted for many minutes, eight photographs were secured and the dummy was the recipient of 19 head and body blows.

The poor owl was a sight when taken from the perch and cannot even be repaired for future use. Great tufts of excelsior protrude from his back and sides, one eye hangs an inch out of its socket by a mere shred of cotton, and the back of his head is entirely torn away, exposing wire framework and areas of stuffing. But he has furnished more than a dollar's worth of fun (see page 9)!

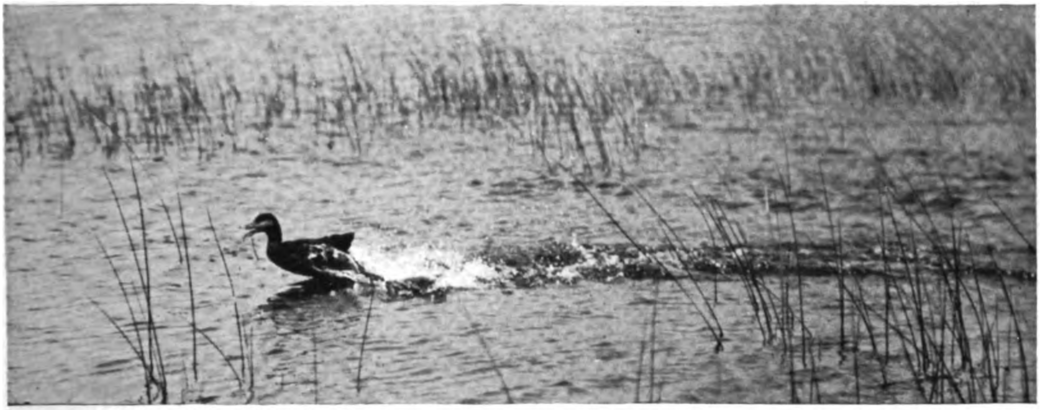
AN ARTIFICIAL GOLDFISH USED FOR BAIT

Perhaps the most carefully thought-out and "highly organized" bird photographic experiment on record (according to the assurances of friends) is that which the writer brought to a successful conclusion near his home on Staten Island, New York, on the 12th of April of the present year, when a fish-hawk, or osprey, was induced to plunge for an artificial goldfish. The details are presented herewith to the readers of the NATIONAL GEOGRAPHIC MAGAZINE.

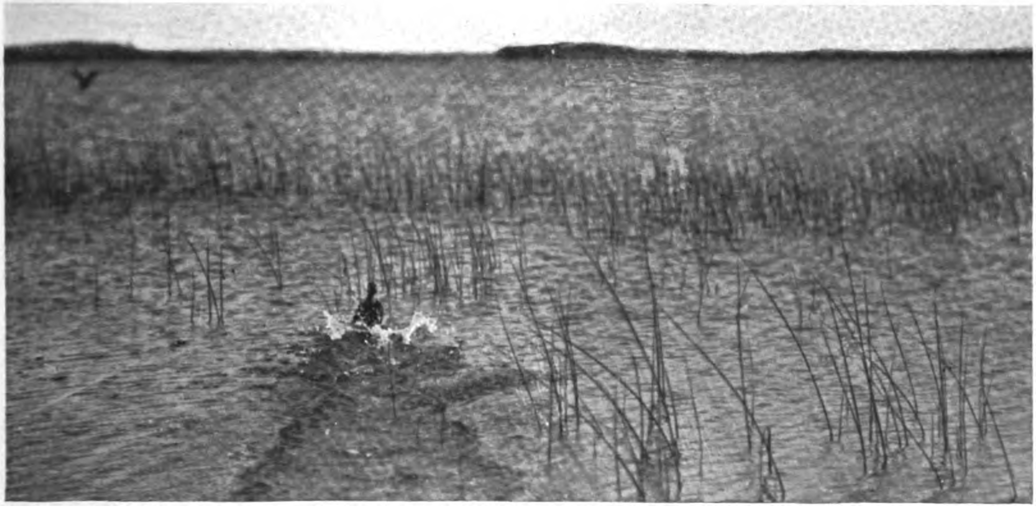
First of all it might be well to have an understanding of the movements and feeding habits of the osprey, for these have a direct bearing on the case. This large hawk, having a wing-spread of about 5½ feet and being one of the commonest birds of prey in the coastal region, spends the winter in Florida, on the Gulf coast and southward, working up the Atlantic seaboard at the approach of open weather and reaching the vicinity of New York about the last week in March or the first week in April—very shortly after the ice has left our ponds, lakes, and rivers.

At this time the menhaden, or "moss bunker," the chief food of the fish-hawk and a fish which is familiar to all who have lived or visited near the ocean, has not yet migrated up the coast, and flounders and other salt-water fishes are not yet

BLACK DUCK, OR DUSKY DUCK, IN BREEDING GROUNDS, MARTHAS VINEYARD, MASS.
An anxious mother circling about us as we held her young

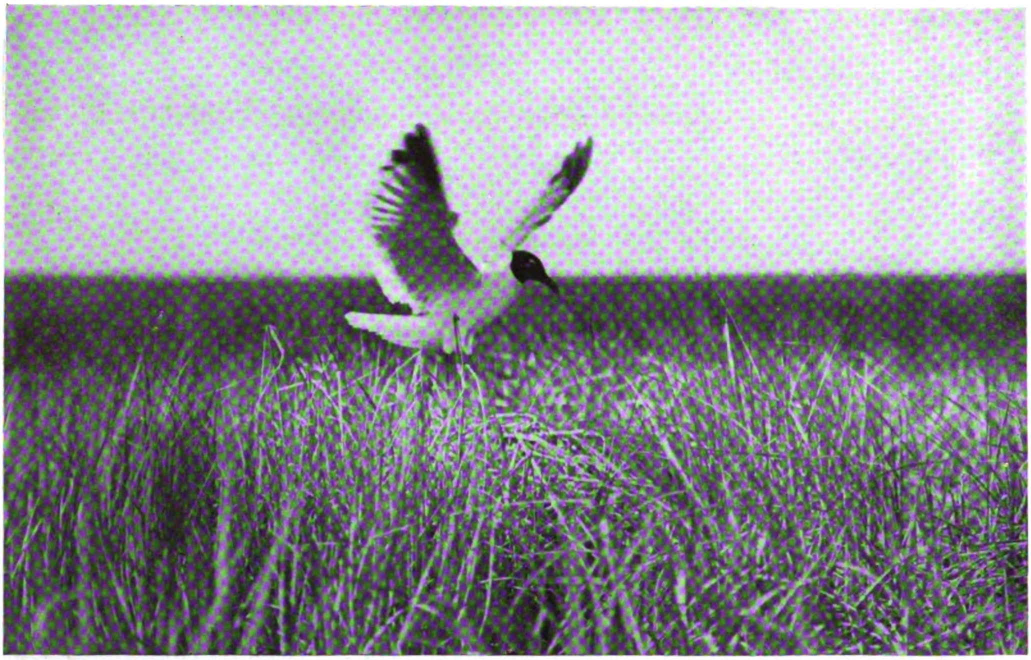


THE SAME "NIGGER" DUCK PRETENDING TO BE TERRIBLY WOUNDED
We were holding her young and whistling in imitation of their cry

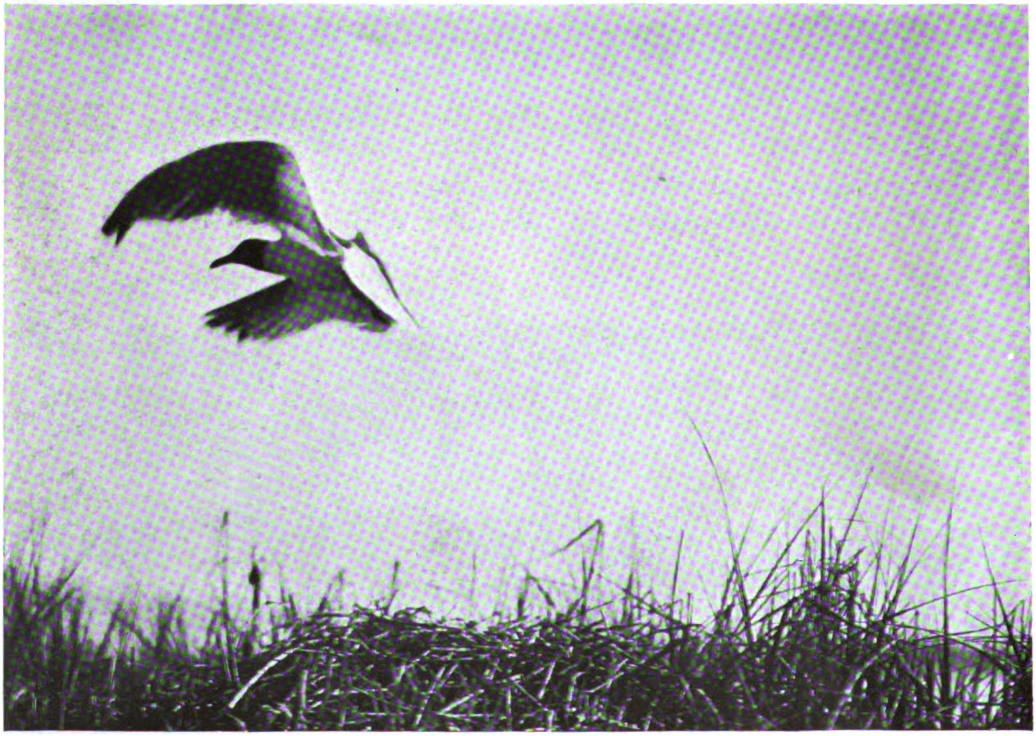


Photos by Howard H. Cleaves

YOUNG BLACK DUCK "HYDROPLANING" ON BEING RELEASED
Mother, fully "recovered," in flight in upper left-hand portion of photo

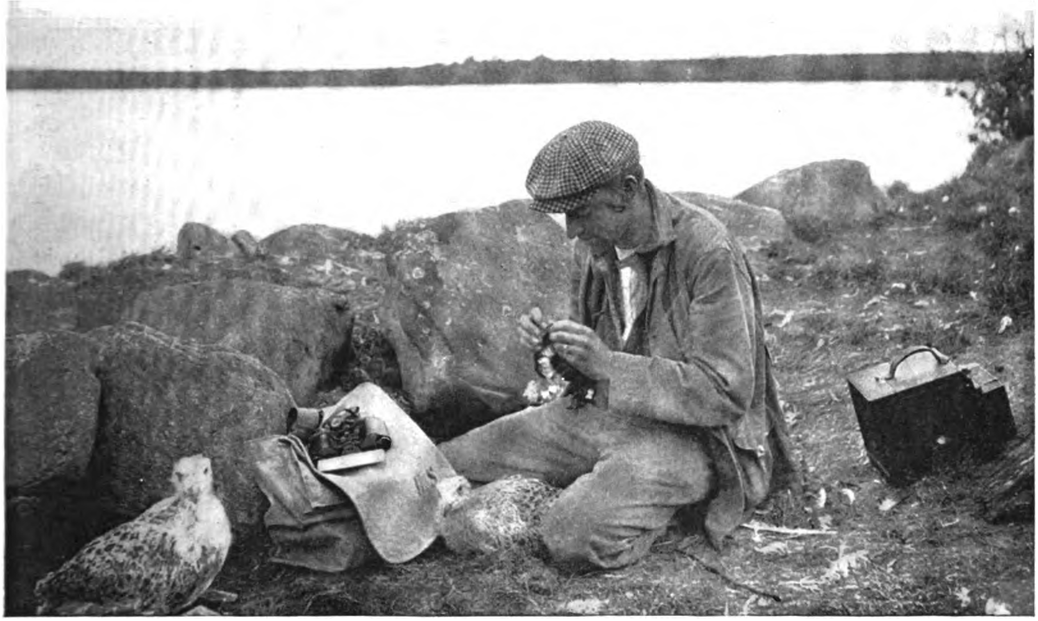


LAUGHING GULL ALIGHTING ON MARSH NEST: COBBS ISLAND, VA.



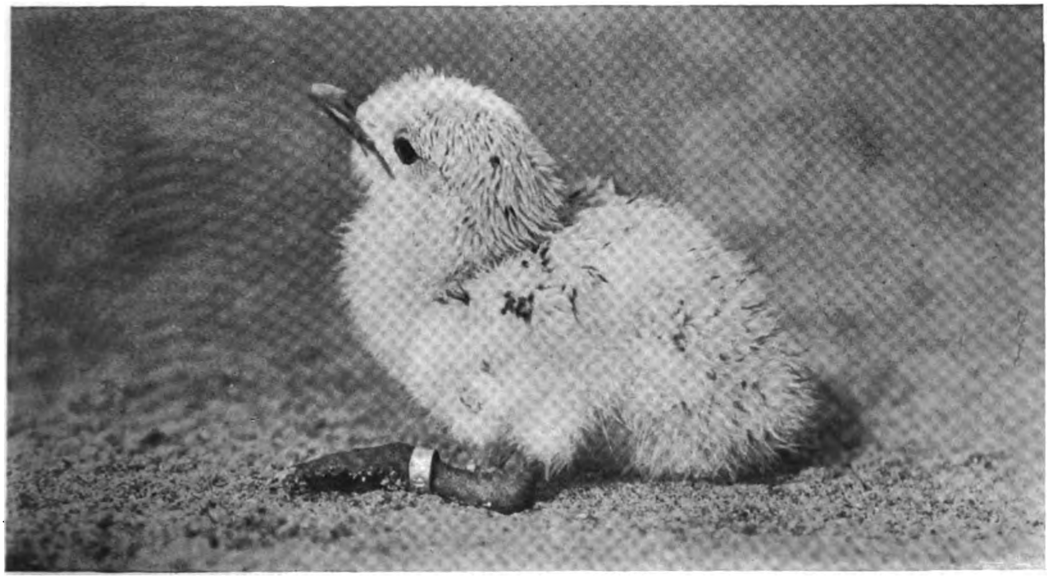
Photos by Howard H. Cleaves

LAUGHING GULL WHEELING: COBBS ISLAND, VA.



HAVE YOU HEARD OF THE BANDING OR RINGING OF WILD BIRDS?

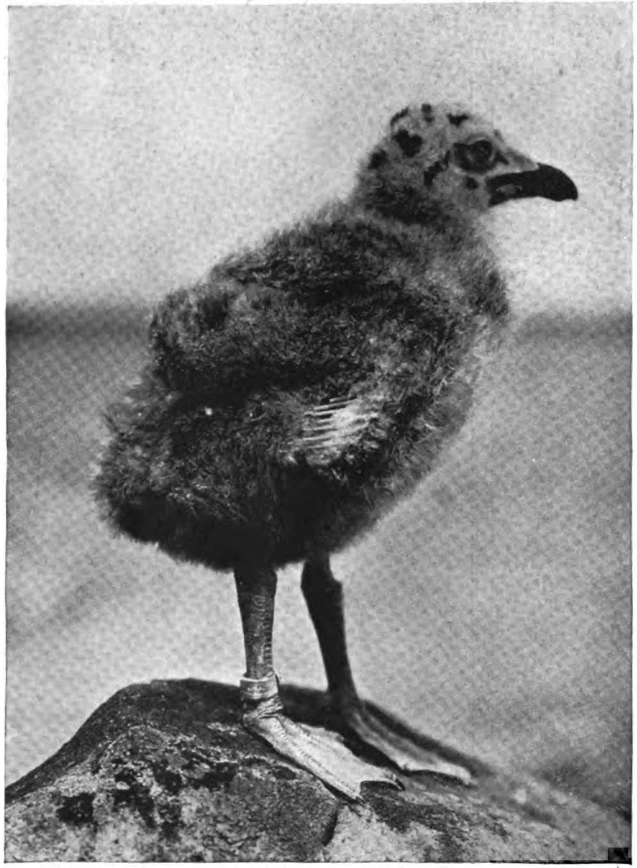
This now wide movement is throwing light on the problems of migration, and especially on the movements of *individual* wild birds. (The author banding young black-backed gulls at Lake George, Nova Scotia. Note the camera and binoculars.)



Photos by Howard H. Cleaves

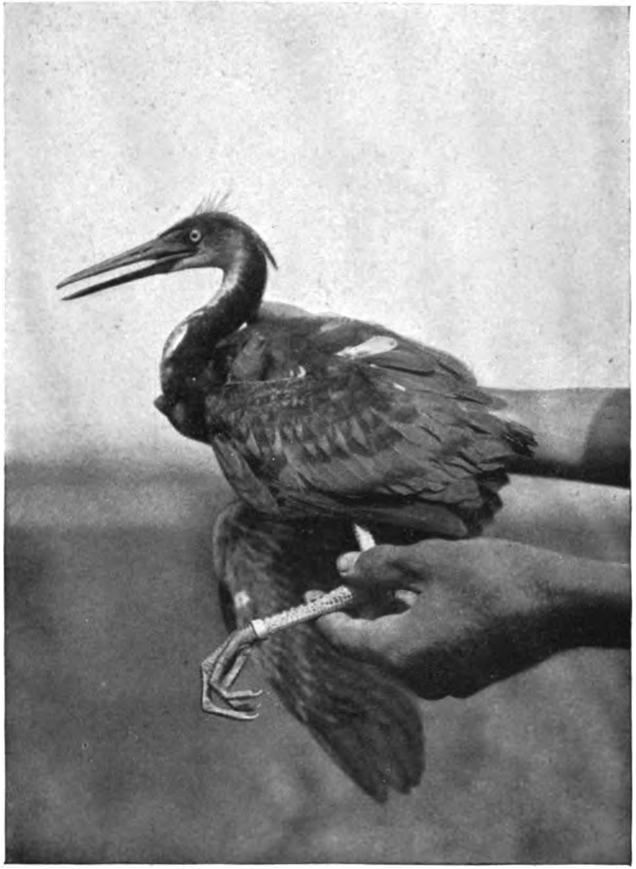
THE BABY ROYAL TERN WITH RING ADJUSTED: VESSEL REEF, S. C.

***"Notify Am. Museum, N. Y.,"* is inscribed on each band, and there is also a serial number**



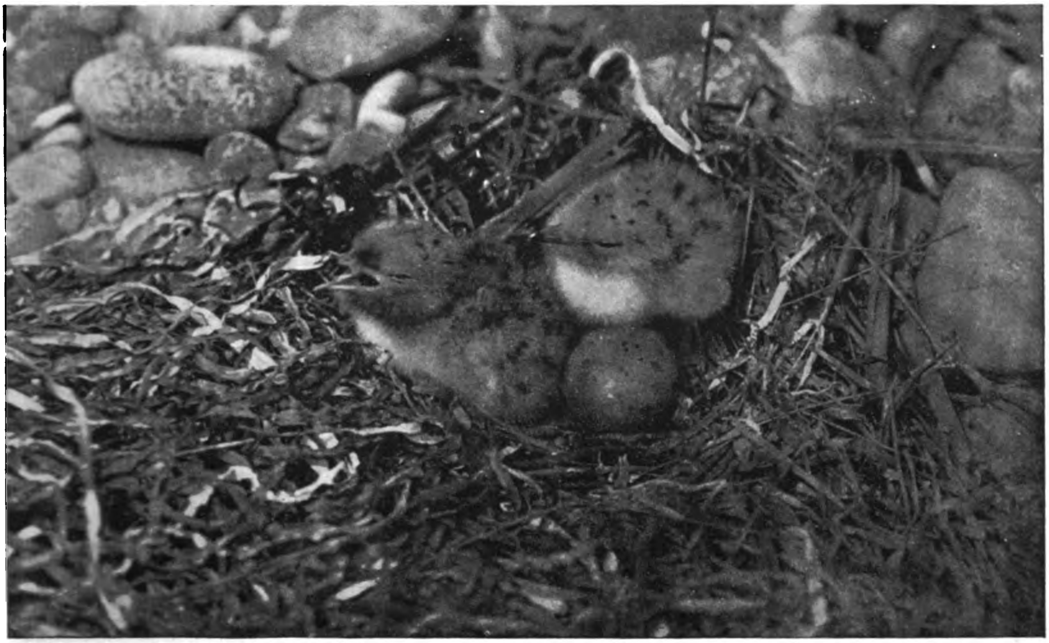
Photos by Howard H. Cleaves

SHOWING A BAND IN POSITION ON THE FOOT OF A YOUNG BLACK-BACKED GULL

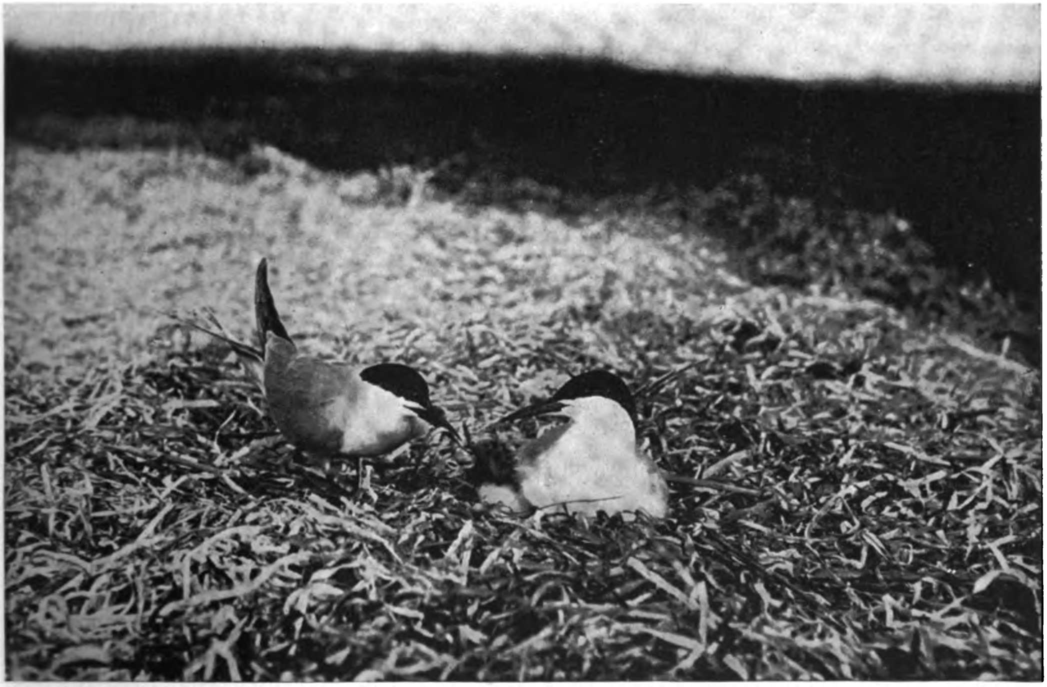


AN IRATE YOUNG LOUISIANA HERON: JUST BANDED

The author and his companion (Caspar Chisolm, of Charleston) ringed 80 herons of five species in a South Carolina rookery in 1913.



NEWLY HATCHED YOUNG OF COMMON TERN, OR SEA-SWALLOW: GARDINERS ISLAND, N. Y.



Photos by Howard H. Cleaves

A SCENE IN THE HOME LIFE OF THE COMMON TERN, OR SEA-SWALLOW: FEEDING YOUNG WITH A SAND EEL, MUSKEGET, MASS.

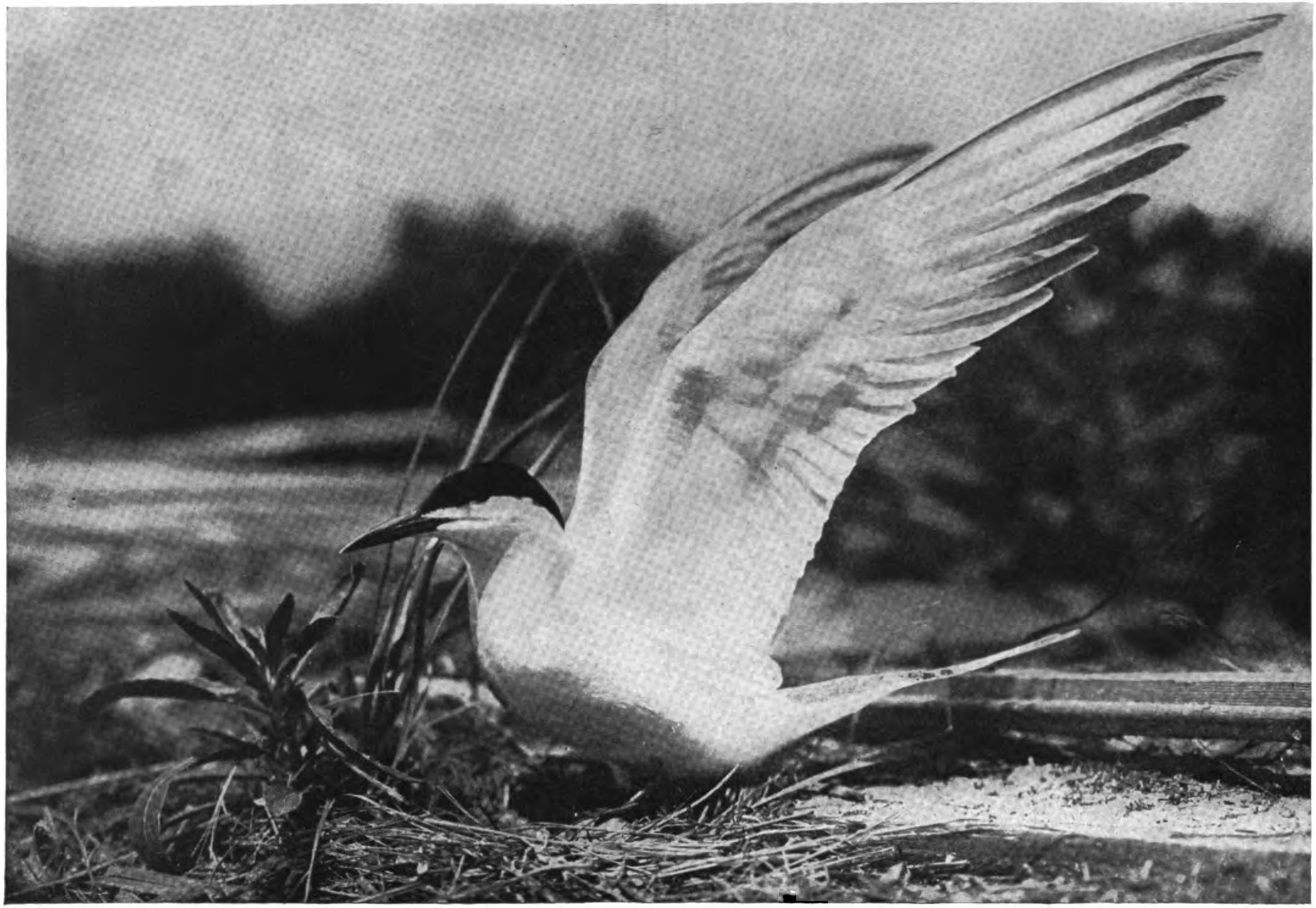
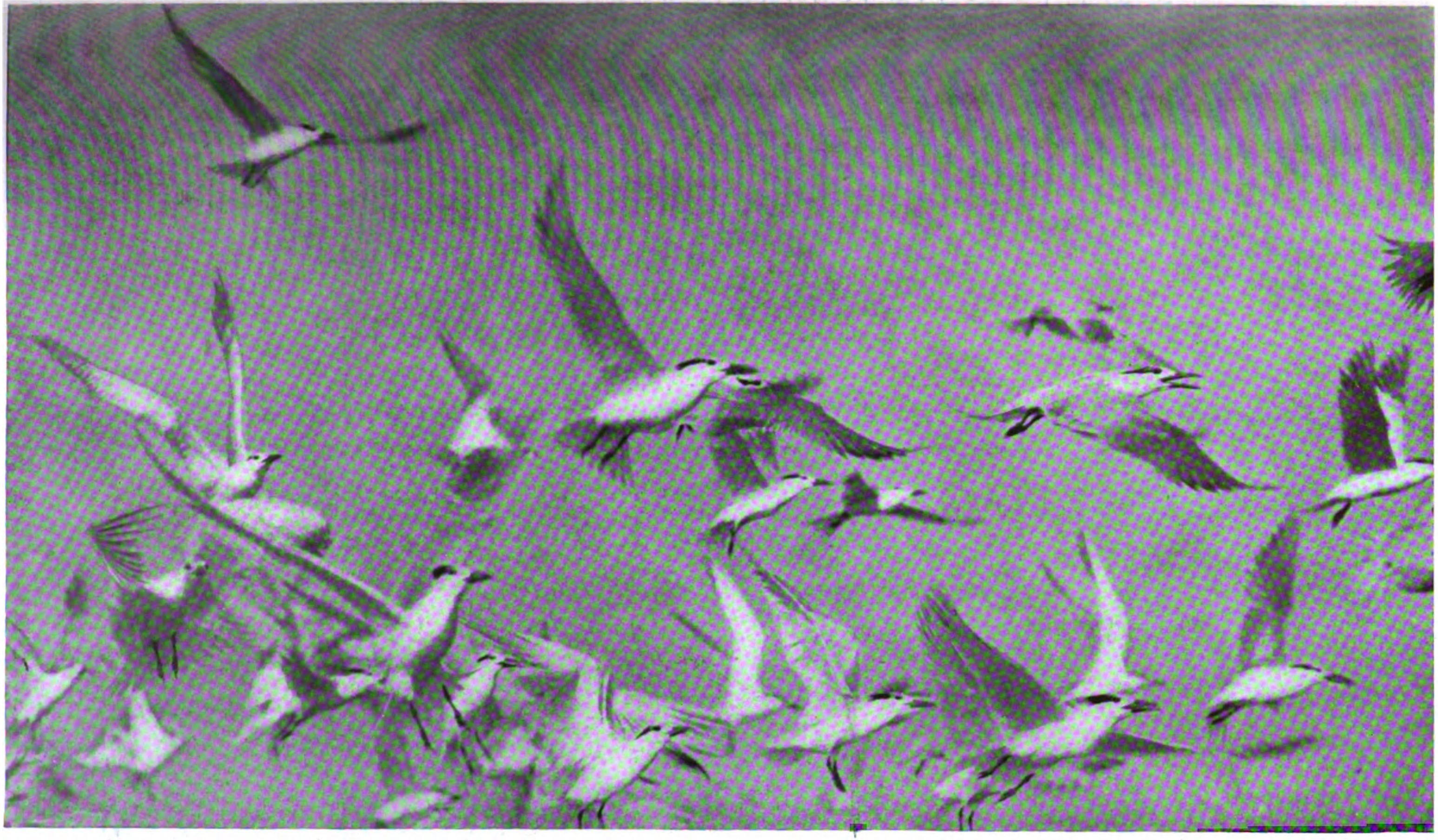


Photo and copyright by Howard H. Cleaves and Doubleday, Page & Co.

A SEA-SWALLOW: "WATCHING THEM SETTLE ON THEIR NESTS AS LIGHTLY AS GIANT SNOWFLAKES"



ROYAL TERNS, OR "BIG STRIKERS": VESSEL REEF, S. C.

Photo by Howard H. Cleaves

"There is something overpowering and enthralling about standing beneath screaming, gyrating myriads of sea-swallows"

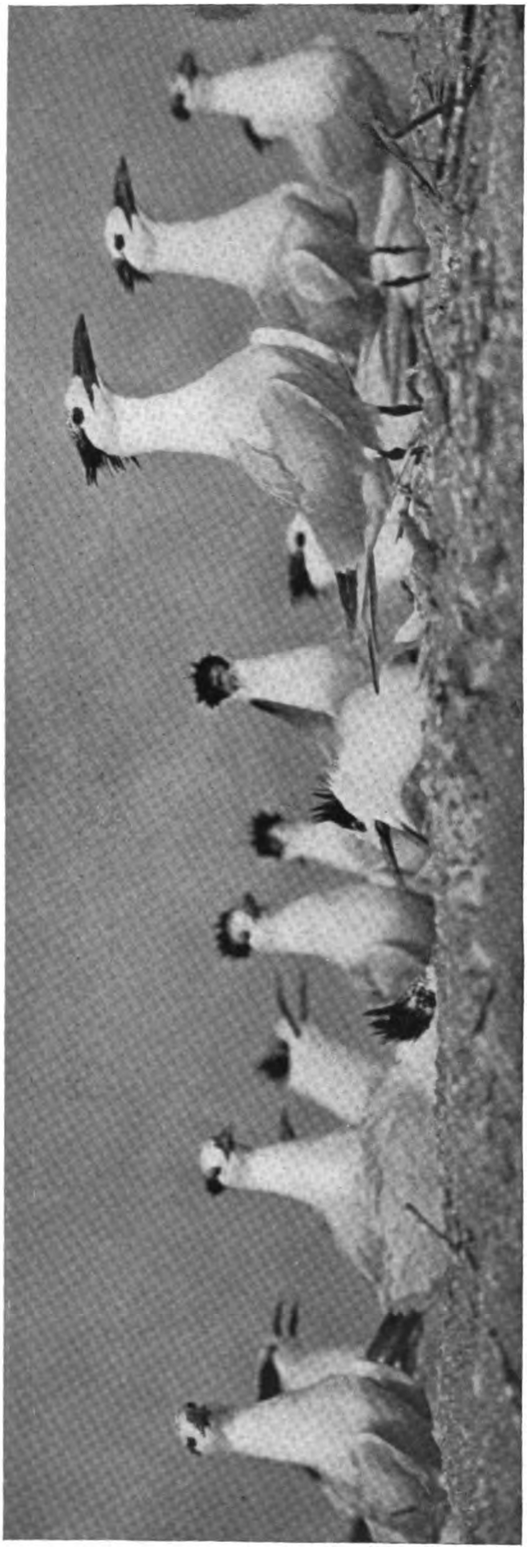


Photo by Howard H. Cleaves

A PORTION OF ROYAL TERN COLONY: VESSEL REEF, BULLS BAY, S. C.

The two birds in center with heads lowered are quarreling over "boundary rights"

wholly available. The invariable result is that the hawks, for at least three weeks after their arrival from the South, hunt almost exclusively in fresh water — chiefly ponds, where golden carp, German carp, and perch are taken. The first named of these three is most often secured, probably because of his orange-yellow color, which renders him more conspicuous in the muddy waters after the spring freshets.

The fish-hawk's manner of securing his prey is highly spectacular. If hunting over a pond he drifts along the lee shore a hundred feet or so above the surface of the water, facing into the wind and keeping his eyes fixed on the pond below. When a fish is sighted, the bird checks himself directly above the quarry on wings that beat horizontally, and should the prospects be good—if the fish is of proper size and at a suitable distance from the surface of the water—down goes the bird at reckless speed, with wings folded and talons wide open. There is a great splash as the hawk strikes the water and seizes the fish by the back.

Year after year I longed to get an osprey at his fishing game on a photographic plate; but who could tell where a hawk might plunge, and how could one be close enough with a camera to catch the bird at it? The matter was given much thought. It was at first planned to capture live goldfish and tether them out as *bait*, but the probable difficulty of securing them when wanted and of making them "stay put" was too great.

So I went to my friend, Dwight Franklin, expert modeler in the American Museum of Natural History, and induced him to make for me an artificial goldfish, to measure 10 or 12 inches in length. This decoy was carved of wood, equipped with glass eyes and celluloid fins, and was given a coat of yellow paint above and silver beneath. When anchored six inches below the surface of the water a short distance offshore, the keenest-eyed fish-hawk could hardly avoid being misled.

The day chosen for the trial was fortunately a bright one, making possible exposures of exceeding rapidity. The wind was in the southwest, so the west or leeward shore of the pond was selected and the umbrella blind put up at the water's edge. With the aid of boots, my companion and helper was able to place the decoy 10 feet offshore, a distance which for several reasons was deemed suitable. The fish was held below the surface by an 18-ounce rock (the decoy weighing nine), which was tied by a thread to a couple of screws in the belly of the fish.

Another thread was attached to a peg in the snout and run to the inside of the blind, the object being to lend a lifelike appearance to the dummy by pulling the thread and moving the fish about at its moorings when the hawk arrived overhead.

All was now in perfect readiness except that not a hawk was anywhere to be seen! We deemed it best, however, to do our waiting out of sight, and accordingly I entered my blind and my companion hid himself away in an old pig-pen a short way up the shore. Inasmuch as a wider view could be had through a crack in the wall of the pig's shelter than from the peep-hole in the blind, my accomplice agreed to give a signal the moment a hawk was sighted in the distance.

For nearly an hour things were dull — the passing of a kingfisher, with his loud, sput-

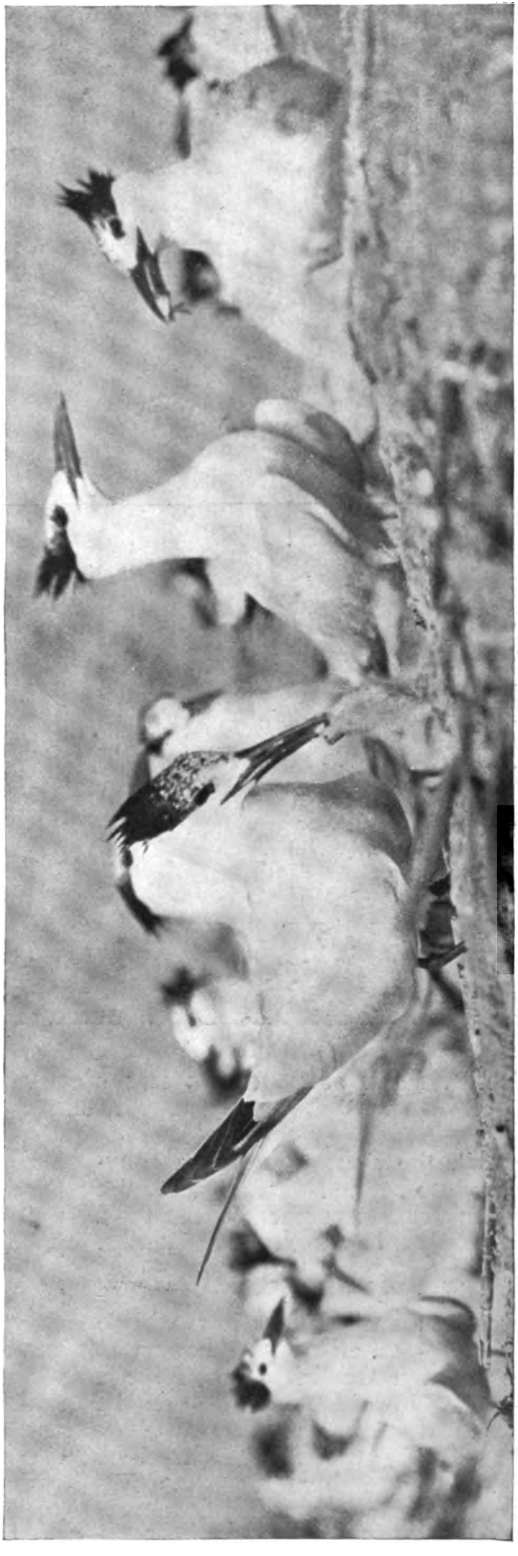


Photo by Howard H. Cleaves

ROYAL TERNS: VESSEL REEF, S. C.

Crowded as closely together as humans in the tenement district of New York, these sea birds carry on their incubating and brooding activities. The bird in the foreground is giving her baby a minnow

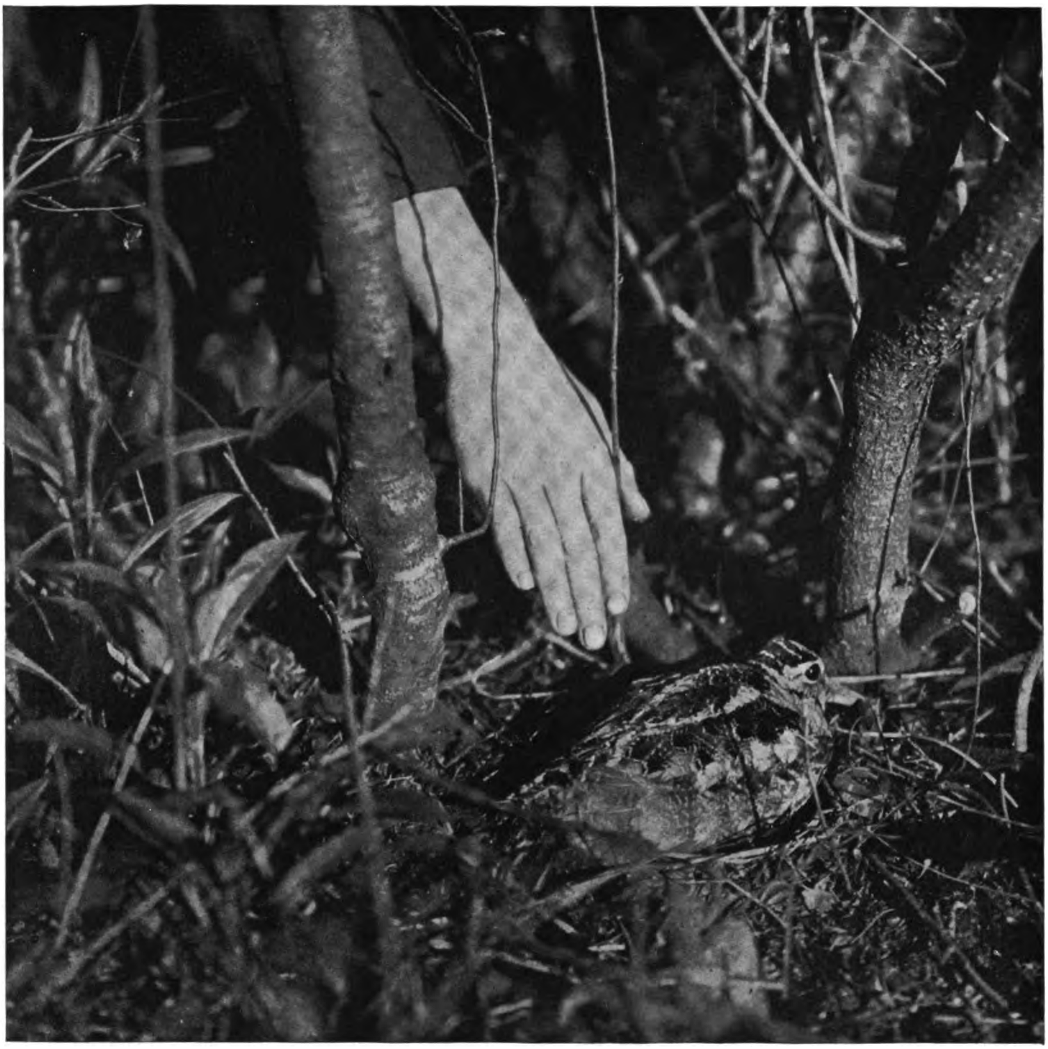


Photo by Howard H. Cleaves

THE EXCITEMENT OF TOUCHING THE ECCENTRIC WOODCOCK ON THE BACK (SEE PAGE 29)

tering call, the cheery tune of a song-sparrow close by, and the sparkle of the sun on the ruffled surface of the pond being the only things to hold our interest.

THE OSPREY APPEARS

Presently there came a low whistle from the pig-pen, and putting my eye to the observation window I could see a hawk sailing toward the pond from the direction of the Atlantic highlands. Soon he was searching the western border of the pond to the south, all the time working in our direction, arriving almost overhead in a very few minutes. Now was the time to act! The thread leading to the fish's snout was given two or three pulls and the camera pushed into place.

But even before I could get my hand to the shutter release there appeared a shadow over the water, and then there was a splash. The hawk was grappling with the decoy and in a few seconds had raised fish and anchor above the water and was making off with them. I feared for my precious decoy, but at that moment the hawk's talons slipped and his burden (equaling half his own weight)

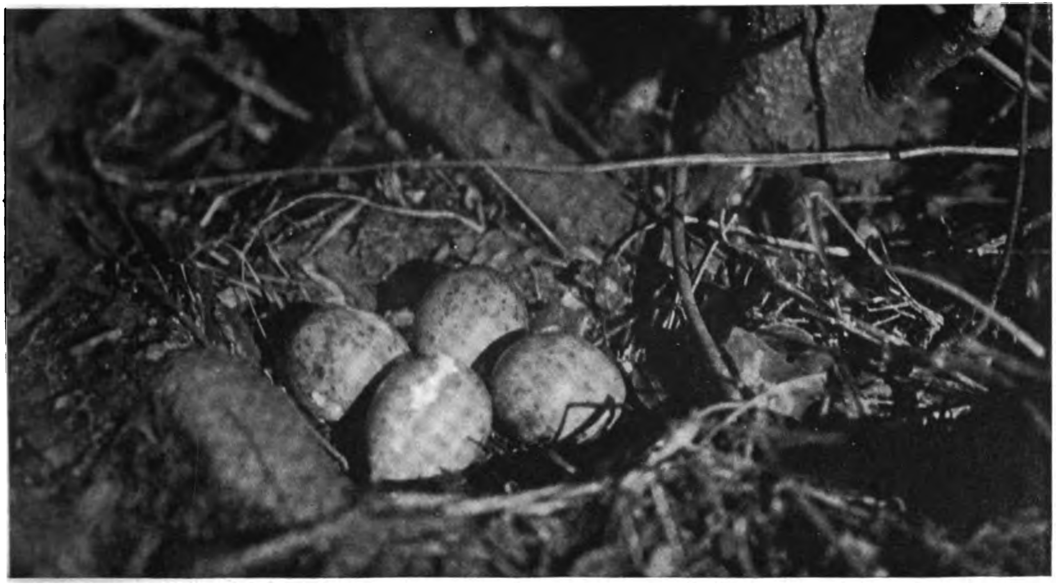


Photo by Howard H. Cleaves

WOODCOCK'S EGGS UNCOVERED

dropped back into the pond (see illustration).

The osprey, however, was not to be deprived of his breakfast so easily; he was hungry and had met with but poor luck in fishing activities the whole morning. So, instead of going away, he simply circled out over the pond and came up wind looking for the fish again; and the fish, quite unlike any that the hawk had ever met, was there awaiting him.

Seven times the osprey fastened his mighty talons onto the back of the stubborn victim, and toward the last became so exhausted that he lay on the surface of the water for a time with wings outspread, while his claws remained closed on the fish below. The hawk's final act was to drag the fish into shallow water near the shore and stand beside it while he leaned over from time to time and tried to bite into the head of the dummy as it floated on its side.

How long he would have remained standing there cannot be known, for he was frightened away by the noise of the focal-plane shutter in the blind, eight feet away. The bird had not noticed this sound when the previous exposures were made, for he himself had caused so much commotion thrashing about in the water that all minor noises were quite lost.

Although experiences such as the one just described are unusual and not often enjoyed, even by those who follow the birds closely, yet there are many out-of-the-ordinary experiments which one may devise; but, on the other hand, much lasting joy is to be derived from doing and seeing just the "ordinary" things.

THE KILDEER

Who, for example, can recall with anything but pleasure the thrill of finding his first woodcock's nest and the excitement of touching the eccentric bird on the back before she would leave her eggs? And the killdeer! How lasting an impression these vociferous and highly patterned plovers make on a person's mind!

Several years ago a pair decided to stop and nest in a cultivated field near the pasture pond, and it was the best possible fun to watch and photograph them. The spot selected for the nest was in the center of a potato field, and it seemed certain that the eggs would be destroyed when the plants were next cultivated (see page 17).

And yet, were I to disclose the whereabouts of the nest, how could I be sure that human hands would not prove as destructive as horses' feet. The head gardener of the estates where the killdeers lived was a diminutive, tanned individual — a man accustomed to being

Photos by Howard H. Cleaves

SCENE OF THE OSPREY EXPERIMENT

Umbrella blind on shore and Leland Wincapaw, the author's companion, re-anchoring the decoy after it had been dragged ashore by the hawk

much in the open, and who ought, therefore, to be familiar with birds; but whether he was keen on their protection or not, who could tell?

I approached him, however; told him of the nest and pointed it out to him. He had never seen anything like it and was much impressed. Would he cultivate around it? Indeed, yes; in fact, the whole row of potatoes where the nest was located should not be touched till the young plovers were safely gone; and, to make certain that the site could be easily told, a couple of large stones were placed a few feet at either side of the nest.

It was delightful to discover this spirit hidden away beneath the bronzed exterior of the old gardener. He talked of the birds of his native lakes in Switzerland and remarked how the killdeers reminded him of a bird he had seen at home. And each year since our first meeting the gardener has greeted me warmly and told me how long the "ringlets" had been back, for the killdeers have come each spring to the big gardens and reared their four young under the protecting care of the little tanned man and his helpers.

SHOOTING WITH THE LENS

One of the great beauties of bird study and photography is that the subjects are without limit. Should one exhaust the possibilities near home (which is well nigh impossible) or desire to expand his circle of feathered acquaintances, there are always awaiting him the wonderful colonies both inland and on the coast. Or if one is not set on having the spectacular, he may go to the north woods, where the brilliant and shy warblers and other birds of passage make their homes.

But at some time, be it soon or late, one is almost dead certain to come under the spell of the sea-bird. There is something overpowering and enthralling about standing beneath screaming, gyrating myriads of sea-swallows and watching them settle on their nests as lightly as giant snowflakes. And then there are the gulls, petrels, guillemots, puffins, etc., of the islands along the north Atlantic coast, while on the sun-baked dunes and

Photos by Howard H. Cleaves

THE FISH WING-STROKE, AFTER THE HAWK'S TALONS BECAME FASTENED TO THE BACK OF THE DECOY AND THE BIRD WAS STRUGGLING TO RISE WITH HIS BURDEN

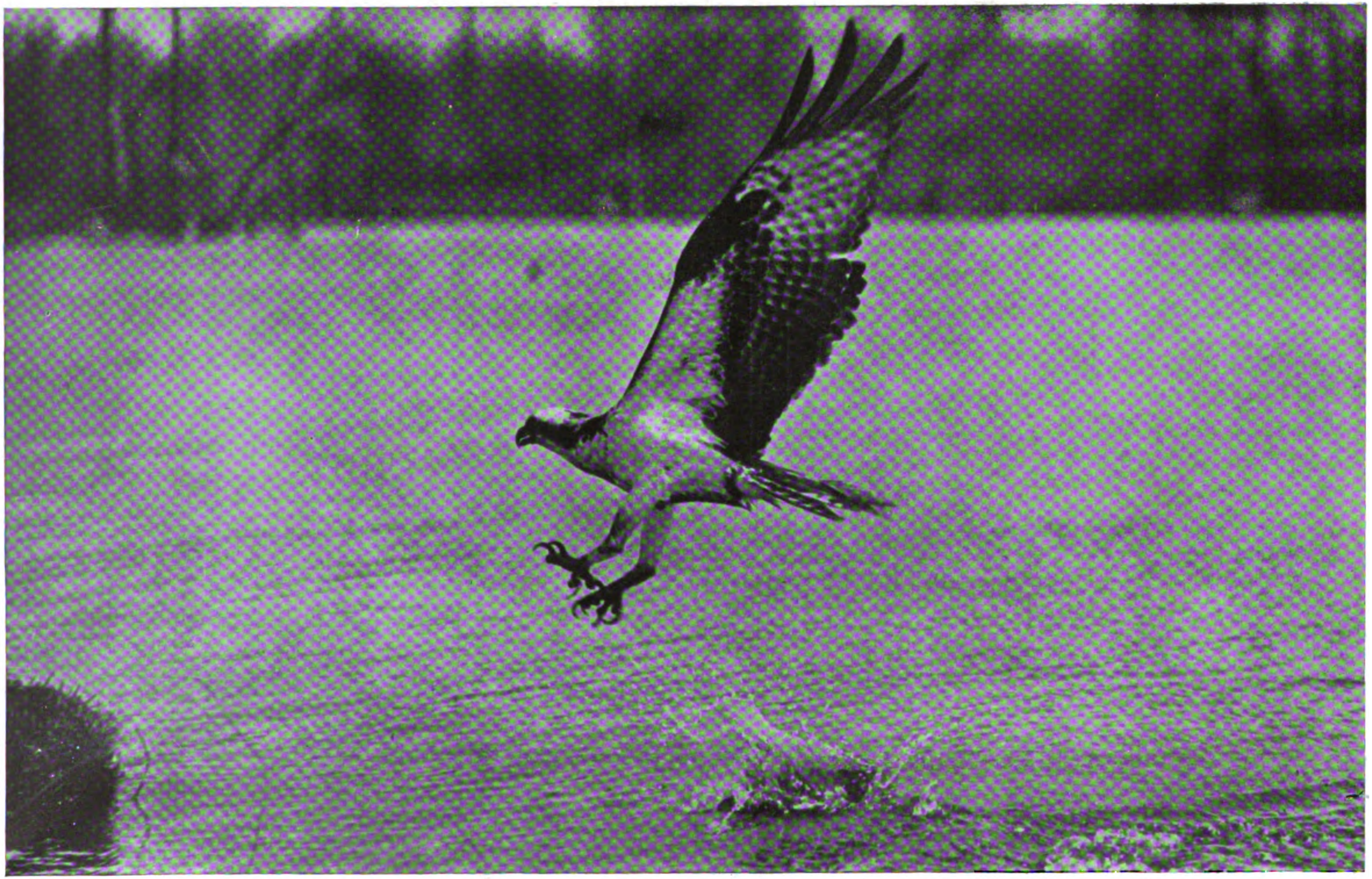
marshes of the southern seaboard are the herons, skimmers, oyster-catchers, the giant royal terns, and countless others—all possessing their individualities and making their separate impressions.

A person should not content himself with being told about these bird cities. They are as marvelous in their way as the wonders of the Yellowstone region, and many of them are under the protection and care of the Federal government as are the animals of the National Park. These birds are, therefore, recognized as a part of the nation's resources, and are available for inspection to any well-intentioned citizen on application. There are at this moment 64 of these wild-life reservations throughout the United States and possessions.

SIXTY-FOUR BIRD RESERVATIONS IN THE UNITED STATES AND TERRITORIES

The names and locations of the bird reservations are as follows:

1. Pelican Island, Fla.
2. Breton Island, La.
3. Stump Lake, N. Dak.
4. Huron Islands, Mich.
5. Siskiwit Islands, Mich.
6. Passage Key, Fla.
7. Indian Key, Fla.



OSPREY, OR FISH-HAWK, RISING FROM A STRIKE Photo and copyright, 1914, by Howard H. Cleaves

"At that moment the hawk's talons slipped and his burden (equaling half his own weight) dropped back into the pond"

Photo by Howard H. Cleaves

"How long he would have remained standing there cannot be known, for he was frightened away by the noise of the focal-plane shutter in the blind, eight feet away. The bird had not noticed this sound when the previous exposures were made, for he himself had caused so much commotion thrashing about in the water that all minor noises were quite lost" (see text, page 29).

8. Tern Islands, La.
9. Shell Keys, La.
10. Three Arch Rocks, Ore.
11. Flattery Rocks, Wash.
12. Quillayute Needles, Wash.
13. Copalis Rock, Wash.
14. East Timbalier, La.
15. Mosquito Inlet, Fla.
16. Tortugas Keys, Fla.
17. Key West, Fla.
18. Klamath Lake, Ore.
19. Lake Malheur, Ore.
20. Chase Lake, N. Dak.
21. Pine Island, Fla.
22. Palma Sola, Fla.
23. Matlacha Pass, Fla.
24. Island Bay, Fla.
25. Loch-Katrine, Wyo.
26. Hawaiian Islands, Hawaii
27. Salt River, Ariz.
28. East Park, Cal.
29. Deer Flat, Idaho

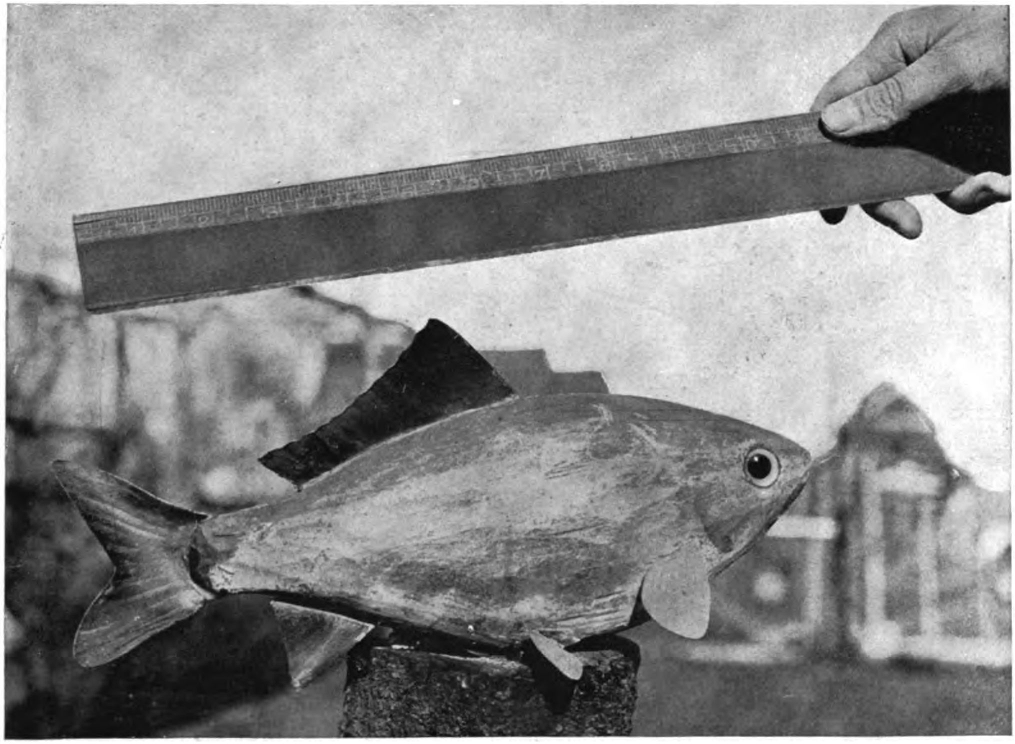


Photo by Howard H. Cleaves

SHOWING THE GOLDFISH WITH "FULL RIG" OF FINS BEFORE BEING ANCHORED OUT FOR THE EXPERIMENT

30. Willow Creek, Mont.
31. Carlsbad, N. Mex.
32. Rio Grande, N. Mex.
33. Cold Springs, Ore.
34. Belle Fourche, S. Dak.
35. Strawberry Valley, Utah.
36. Keechelus, Wash.
37. Kachess, Wash.
38. Clealum, Wash.
39. Bumping Lake, Wash.
40. Conconully, Wash.
41. Pathfinder, Wyo.
42. Shoshone, Wyo.
43. Minidoka, Idaho.
44. Bering Sea, Alaska.
45. Tuxedni, Alaska.
46. St. Lazaria, Alaska.
47. Yukon Delta, Alaska.
48. Culebra, P. R.
49. Farallon, Cal.
50. Pribilof, Alaska.*
51. Bogoslof, Alaska.
52. Clear Lake, Cal.
53. Forester Island, Alaska.
54. Hazy Islands, Alaska.
55. Niobrara, Nebr.
56. Green Bay, Wis.
57. Chamisso Island, Alaska.
58. Pishkun, Montana.
59. Desecheo Island, P. R.
60. Gravel Island, Wis. (Lake Michigan).
61. Aleutian Islands, Alaska.
62. Walker Lake, Ark.
63. Petit Bois Island, Ala.
64. Anaho Island, Nev.

What could constitute a more ideal vacation trip than packing off in May or June, the height of the birds' breeding period, and traversing a portion of the coast with a view to stopping here and there at the most populous and fascinating bird rookeries? If the writer were to be stricken in the next 24 hours with some malady which would confine him to his bed for the balance of his days, the most highly cherished memories that could come to him would be of his experiences in the big bird colonies of the Atlantic coast. Most of these spots are islands, for there are few enemies on these places such as the land birds have to contend with, and an abundant and constant food supply is always at hand in the ocean near by.

From personal, first-hand experience

---

* Transferred to Bureau of Fisheries by act of April 21, 1910.

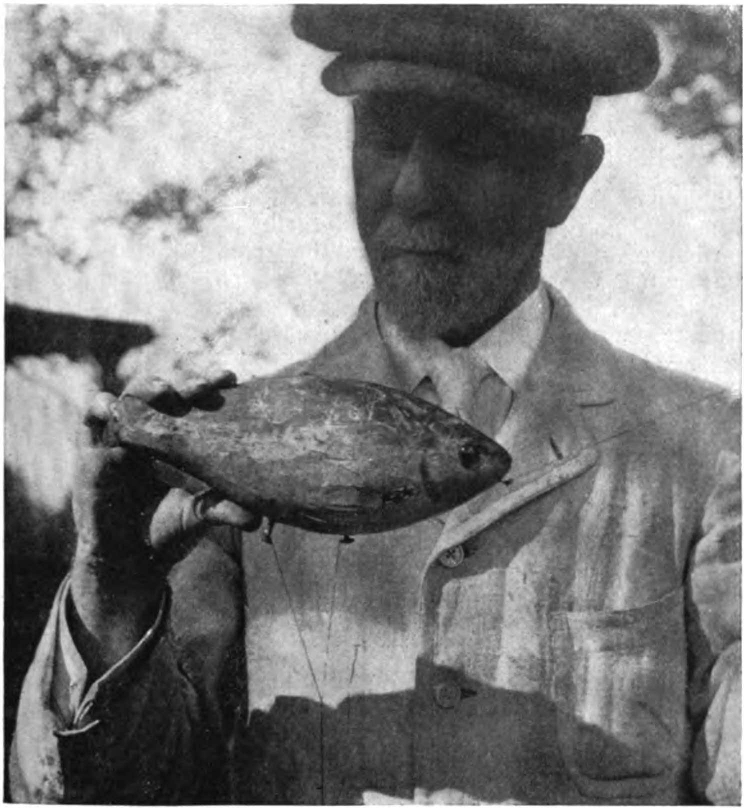


Photo by Howard H. Cleaves

THE DECOY GOLDFISH AFTER THE EXPERIMENT

Showing how fins were all torn away by hawk's talons, and scratches and scars on the back of the fish. The anchor stone, thread, and nose-string are also to be seen

the writer can recommend the following specific localities and general regions:

Seal Island, Nova Scotia, for the herring gull, black guillemot, Leach's petrel, eider duck, Bicknell's thrush, blackpoll warbler, and yellow-billed flycatcher.

Lake George, Nova Scotia, for the great black-backed or minister gull.

Muskeget Isle and Martha's Vineyard, Massachusetts, for the Wilson's or common tern, least tern, piping-plover, black duck, and laughing gull.

Gardiner's Island, New York, for the fish-hawk, black-crowned night heron, common and roseate terns, piping-plover, short-eared owl, parula warbler, and Bartramian sandpiper.

Cobbs, Wreck, and Little Isaacs islands, Cape Charles, Virginia, for the black skimmer, or flood gull, laughing gull, clapper rail, and common tern.

And the coast of South Carolina for a distance of 60 or 70 miles north of Charleston for the willet, Wilson's plover, oyster-catcher, royal tern, least tern, snowy and American egrets, Louisiana, little blue, black-crowned night, and little green herons, brown pelican, black skimmer, anhinga, or snakebird, etc., and many, many land birds, including the incomparable painted bunting.

To even begin going into a detailed description of the home life of one of these wonderful creatures would require more space than could be allowed in a general magazine article. The writer can therefore but urge the reader to spurn the summer hotel, with its pomp and artificiality, charter for himself a modest sloop or power-boat, and make his way through lagoons and tide-rips to these isolated islands, and follow the picturesque channels of the salt marsh in quest of the bird-inhabited bars and reefs.

YOUNG JAPAN

By Eliza R. Scidmore

THE children of the streets and the children who play in the homes and gardens of the rich are equally the joy of the Empire, the delight of the stranger in Japan, and the distraction of the amateur photographer. All of them seem happy save the unhappy mites doomed to ugly, clumsy European dresses and shoes and hats by their over-ambitious parents. In their own dresses of rainbow crape or blue cotton, they are the drollest, quaintest little images of their grandfathers, and the funny little caps and bibs of the babies make them strange travesties of solemn temple images.

Five hundred thousand little Japanese arrive each year, according to the census records, and all these small additions to the populace for 10 years back seem always to be on view in the streets.

Despite the fable that Japanese babies never cry, they often do lift their voices in pain or wrath; but they seem to have less cause for crying than the babies of the Western World, where so much theorizing has been done about them and great conventions of mothers discuss their needs. Babies are petted and played with here almost more than with us, and no learned young mothers ever lay their babies away in dark rooms alone to sleep.

The little one of the people is never left behind when the mother or the family go abroad. It sleeps and wakes as it rides around on mother's or elder sister's warm back; or, in colder weather, enfolded in the one great matted coat that converts the bearer into an astonishing humpback. It goes to the markets, the shops, and the temples, and holds its place securely while the mother draws water, sweeps, or washes, and then participates in games of marbles or hop scotch and turns pin-wheels and somersaults with elder brother.

The boy or girl big enough to carry a baby on its back usually has one bound there. Several millions of the abundant population are to be classed as the "two-storied," and yet the streets seem crowded with children. Sometimes the fat, lob-lolly baby seems too nearly the same size as the small brother or sister carrying it, and once I saw a man, trying to comfort one of these weeping little mothers, mount the two on his back, and the three-story group walked away on two feet.

Schools begin early in the morning in Japan, as in Switzerland, and as schoolhouses are well-windowed, draughty and costly to heat, children have their longest vacations in midwinter. In every city one is struck by the numbers of boys in military caps and girls in red *hakamas* (divided skirts, a school uniform) trudging the streets in the early morning and afternoon, and it impresses one as evidence of great thirst for knowledge or the thorough administration of the law for compulsory education. At recess time one easily finds the school playground by the shouts of the square acre of frolicking children, and from the streets and country roads one sees lines of children doing drills or calisthenics.

In the kindergartens boys and girls drill and play much alike, but after that diverting period the small boy blooms into knickerbockers and a peaked cap, and carries his books in a knapsack on his back. Gymnastic drills become military drills, and at the higher middle school, which is preparatory to the university, the boys get training in jiu-jutsu and in fencing with bamboo swords.

In some schools—notably the Peeress School and others in Tokyo—the girls are also taught the *naganata,* or fencing with bamboo spears; and they, too, can march and perform evolutions like little soldiers, and render first-aid services according to Red Cross rules.

As a people, the Japanese are great walkers, and their sensible foot-gear contributes to the enjoyment of such exercise. Flatfoot, the great and universal American disease, is unknown in Japan, and army surgeons laugh when asked for their records of fallen arches. As their ancestors walked in the train of the daimios up to Yeddo and back again every year, or made pilgrimage to far temples or famous landscapes, little Japan trudges sturdily about the environs of his city in military formation, or makes railway and walking trips farther afield every Saturday in spring and autumn.

One hears the chirp of their voices or some chanted poem as they march through the streets, even before daylight, on these red-letter days. This year all central Japan made pilgrimage to Momoyama, to the tomb of the Meiji Superior, and every day in the week an average of 30,000 school children came by train and joined the decorous crowds that filled the roadways from side to side as they walked up through the bamboo forest to the great, green grave mound on the summit of the hill. On many days 150,000 people visited Momoyama, but the spirit of reverence was so great that there was no noise, no frolicking and shouting, or running at play of all these youngsters.

Most touching of all demonstrations of affection made by his people while the Meiji Emperor lay dying was that presence of legions of school children, who, singly or in groups, bowed low toward the palace walls or prostrated themselves on the gravel to pray that the august life might be spared.

Wherever the great Emperor had traveled in the land, the school children were always lined up at railway stations to do him honor. The Spartan training and the iron etiquette of Japanese children enable them to stand like statues—or soldiers—in storm or rain, a summer shower affecting these people in their humid climate no more than it does the birds.

Once the Meiji Emperor saw ranks of children standing in the open in swirling snow, and court and local officials never forgot his wrath. "Let this never happen to my children again," said the compassionate ruler; hence every school boy and girl who goes on such errand now, and all who went to Momoyama, had an umbrella strapped to the back with the lunch basket.

While Japanese children may be martinets in good manners when parents and teachers are around, they have as much fun as any other children by themselves. The impishness of street children is even gentle compared to our street arabs, but baseball and football may teach new standards even to the highest classes. They have their games of tag and follow-my-leader, of blindman's buff, games of cards and checkers, hide and seek, and many mystic rhymes for "counting out." In their indoor games a common forfeit is a dab on the face with the ink brush, and a company of noble youngsters are as so many minstrels or coal heavers when they have played long at "twenty-questions" and its kind.

In winter they build snow men as they build sand forts on the seashore, and at the regular spring and fall house-cleaning they wreak their will with the white paper of the *shojis,* or sliding screens, that wall a room from the outer veranda of the house. They love to tear and daub and prod the papers they at all other times treat so respectfully. There are street jugglers and acrobats, dancers and singers, that would set our small folk wild were they called in to help enliven a children's party—little gnomes who dance in masks as tall as themselves, old men with india-rubber faces, who twist mouths and noses and make faces that small boys only too rapturously copy.

Little Japan drinks tea with as much gusto and as naturally as his elders, and the smallest children manage their chop-sticks with a deftness that amazes the blundering stranger, who can make no headway with the magic wands. Children learn to use the chop-sticks and acquire their table manners more easily than western children learn the complicated drill with knife and fork and spoon. The implements are simpler and lighter, and all Japanese food is more completely prepared before being sent to the table. All bones and waste are eliminated in the kitchen, and meat and such solid materials are cut into manageable shreds and morsels before cooking.

Young girls have a rigorous training in household arts and such accomplishments as flower arrangement, ceremonial tea-making, the construction of miniature landscapes in shallow trays or boxes, and playing the koto and the foreign piano. Yet it was the mistress of the most important girls' school who put all the foreign pianos out and dismissed the teacher "for the sake of peace and harmony in the school."

Three years of training and practice are not enough to perfect the ordinary pupil in that exquisitely elaborate and refined Japanese art of flower arrangement, where flowers spring, with their leaves and stems, from vases or basins of shallow water as they grow naturally, but Nature perfected and idealized according to codes of rules made by teachers of such esthetic arts for the past eight and ten centuries.

Also the gardens, in which these girls gather for decorous play and games of poetry, are as carefully arranged idealizations of natural scenery, and the soft colors of their crape and silk kimonos accord perfectly with the unvarying garden symphony of gray rocks and evergreen foliage. A soft, grass sandal, especially made for garden wear, protects the precious garden stones and the deep-pile mats of fine, soft grass.

The indoor ceremonies of receiving, entertaining, and speeding a guest are matters of careful training, for nothing in Japanese life lacks its conventional rules, its elaborate etiquette. The graceful dress of Japanese women, its sober tones and long lines, is suited to the dainty house interiors, with their fine, satiny straw mats and luxurious crape cushions. The craze for European dress for women, following upon its adoption as the dress of court ceremony 25 years ago, fortunately died out in due time; so that, except at the palace and on most ceremonial occasions where foreigners take part, Japanese women of highest rank wear their own becoming clothes—a rebuke in its unchanging lines and quiet colors to the insane vagaries of the West.

Each season has its appropriate material and colors. Each year the fashions change in ways the purblind foreigner does not see. Each year the theme of the Emperor's New Year poem gives suggestion to designers and dyers, and in this way these varying patterns of sashes and neck folds date them precisely to the initiated.

Great patterns and gay colors are for children and babies, and from the beginning of time the Japanese woman has folded her robe over to the right that she might hold the edge in place when she bent in a deep bow.

Only in death is the kimono folded to the left, so that there is always laughter when the self-complacent foreigner has her portrait taken or goes to a fancy-dress ball, or a theater manager clothes a whole company in kimonos folded according to the etiquette of corpses. Nothing else in the world is so funny—not the most luckless attempt of the Japanese woman to wear foreign dress—as the failures and burlesque the foreign woman achieves when she essays Japanese dress. The East has its revenge tenfold at those seasons, and photographers' rooms in Japanese cities are chambers of such horrors.

EXPLORERS OF A NEW KIND

Successful Introduction of Beetles and Parasites to Check Ravages of the Gipsy-moth and Brown-tail Moth

By L. O. Howard

Chief of the Bureau of Entomology, U. S. Department of Agriculture

THE story of the gipsy-moth and that of the brown-tail moth are two of those geographic happenings unconsidered in the old geography, but important in the geography of today. They are not normal inhabitants of the United States, but are assisted immigrants. The gipsy-moth (see page 50) was brought to this country by a French professor of astronomy in a New England university in the course of some experimental work which he was doing.

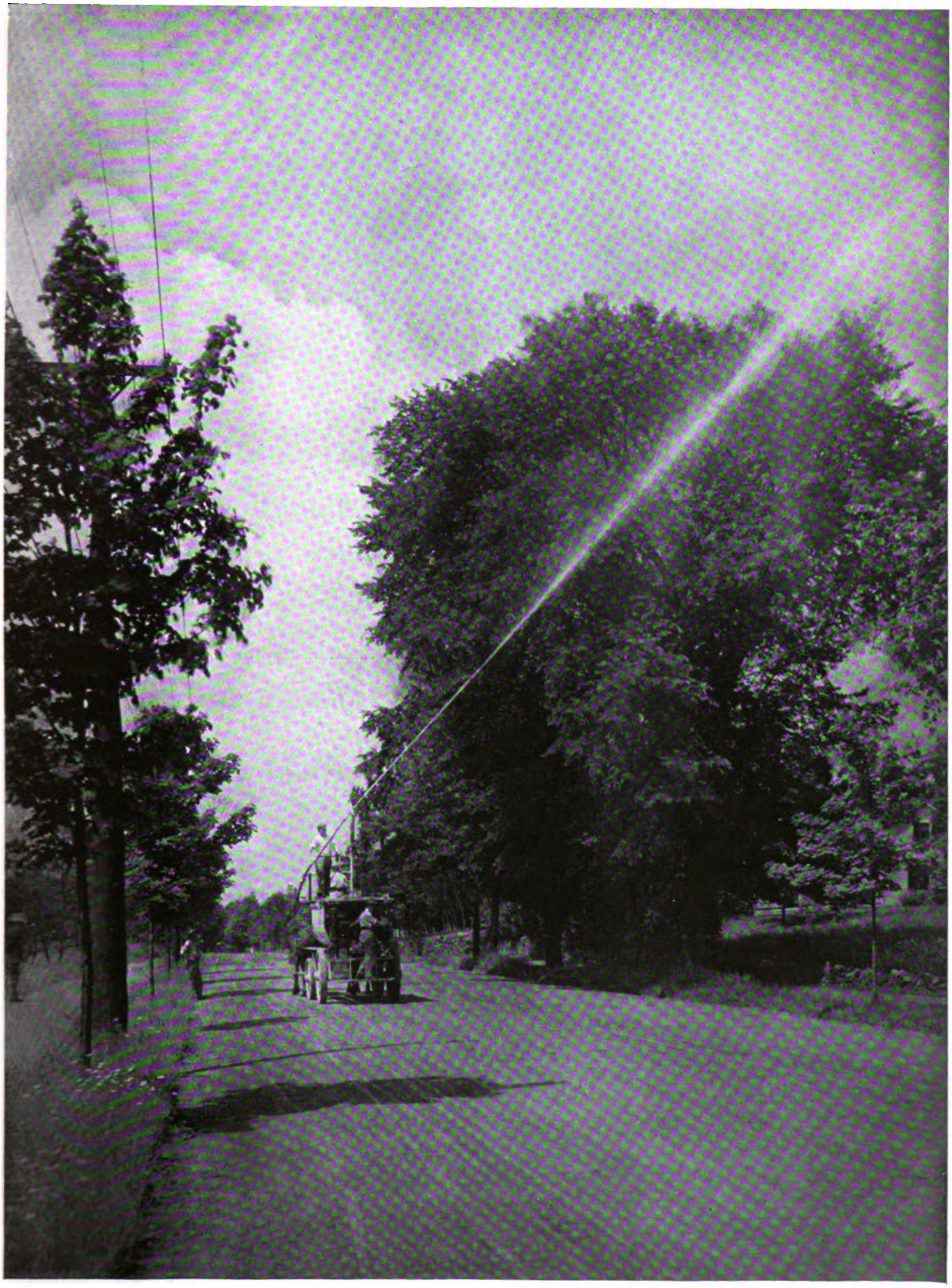


Photo from U. S. Department of Agriculture

SPRAYING WITH A SOLUTION OF ARSENATE OF LEAD TO KILL GIPSY-MOTH CATERPILLARS NEAR BOSTON

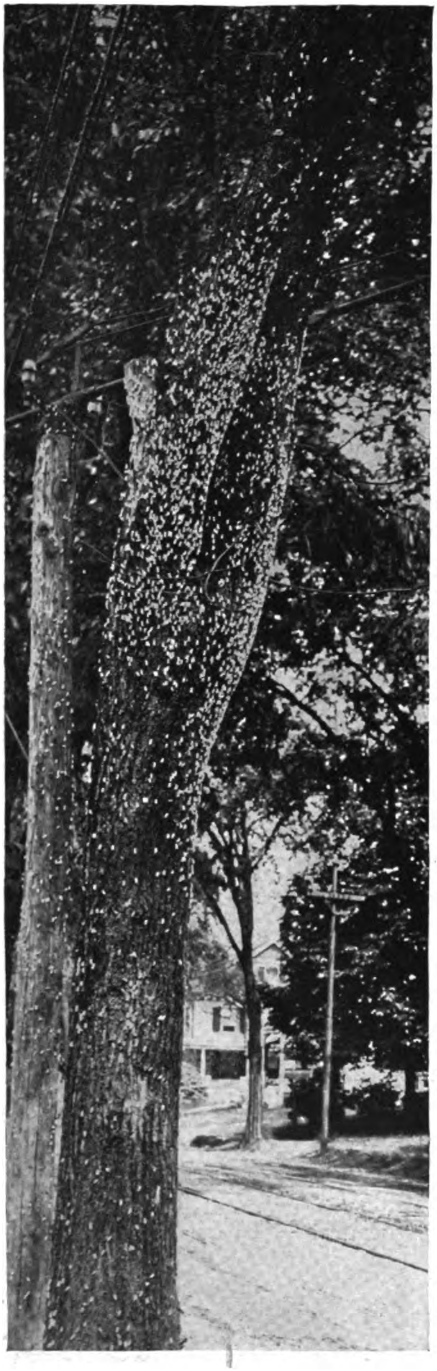


Photo from U. S. Department of Agriculture

BROWN-TAIL MOTHS ON A TREE

That sort of importation of insect pests is fortunately rare, and this is almost the only case of the kind on record.

The brown-tail moth (see page 52), on the contrary, came to America in the normal course of commerce. Its winter nests were brought here attached to some rose-bushes which were imported by a Massachusetts florist from Holland, and, unrecognized, the caterpillars issued the following spring and the species soon became established in America.

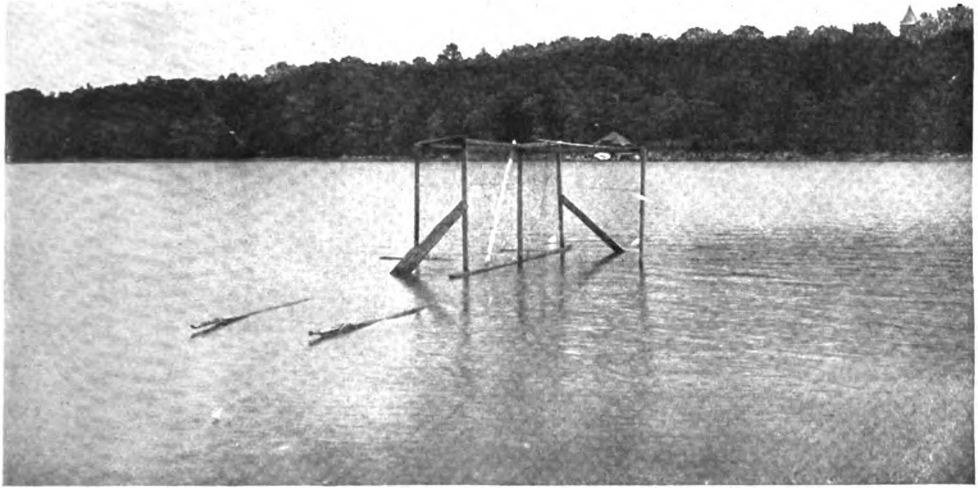
The gipsy-moth was brought over in 1868 and remained unrecognized until 1889. The brown-tail was brought here in 1891 and was first recognized in 1894.

From 1892 until 1900, both species being confined to the extreme eastern portion of the State of Massachusetts, a fight for extermination was waged against them by the authorities of that State. Unfortunately, certain influences at work caused the stopping of the appropriations in 1900, and from that time until 1905 both insects spread uninterruptedly save for private work on the part of individual property-holders. In 1905 Massachusetts began again to appropriate large sums for the purpose of trying once more to exterminate the pests, and later, as the spread continued, New Hampshire, Maine, Rhode Island, Connecticut began to spend money in the same direction. Then the United States government stepped in, and in an effort not to exterminate the insects, but to prevent their further spread over the face of the country, large sums have been spent annually in the attempt at least to restrict them.

IMPORTING MOTH PARASITES

In 1905 was begun for the first time the attempt to import from Europe and from Japan the parasites and other natural insect enemies of the gipsy-moth, and in the course of this attempt extensive travels have been made by agents of the Department of Agriculture, the services of foreign naturalists have been called in, and enormous numbers of parasites have been brought from all over central and southern Europe and from Japan and have been colonized in the infested region.

The introduction of the pests and their spread furnishes the first geographic feature. The search for their parasites the second, and the third has been the quarantine by the newly constituted Federal Horticultural Board of the United States



THE YOUNG CATERPILLARS ARE CARRIED BY THE WIND SIX MILES OR MORE

The screen shown in this picture is covered with tanglefoot to catch caterpillars in the air. As the young caterpillar of the gipsy-moth hatches from the egg, it spins down on warm days suspended by a silken thread, is caught up by the wind and carried sometimes for miles before it succeeds in attaching itself to a tree or shrub. Large-scale experiments in the last two or three years, conducted by erecting enormous wire screens at various distances to the windward from infested woods, the screens being coated with a sticky substance, have shown that many young caterpillars are carried in this way to a distance of six miles or more.

Photos from U. S. Department of Agriculture

SAWED LUMBER, BEARING EGG-MASSES OF THE GIPSY-MOTH, SERVES AS AN EASY MEANS FOR THE SPREAD OF THE MOTHS

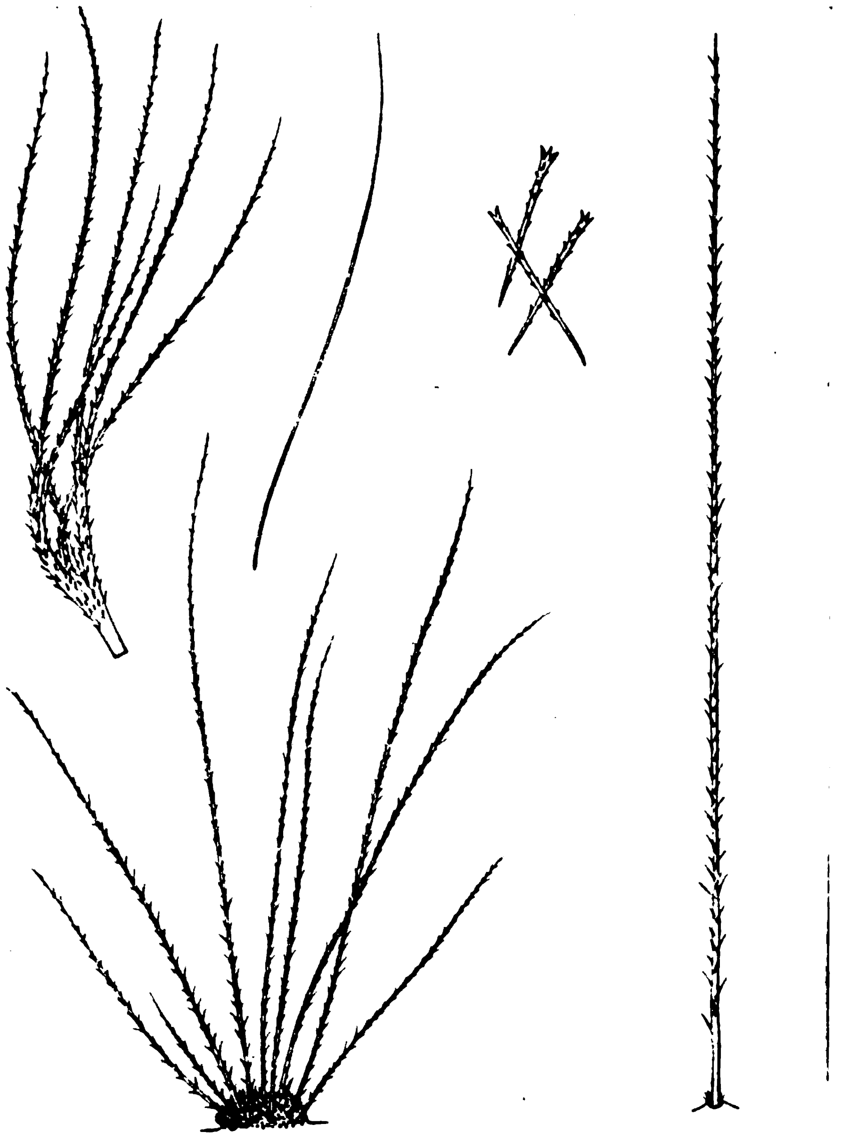


Photo from U. S. Department of Agriculture

THE GREATLY ENLARGED BARBED HAIRS OF A BROWN-TAIL MOTH CATERPILLAR, WHICH CAUSE THE BROWN-TAIL RASH (SEE TEXT, PAGE 48)

of the infested areas in New England from the rest of the United States, and all of Europe and Japan from the United States, in so far as non-inspected nursery stock, shrubs, ornamental trees, and any substances likely to carry the eggs of the gipsy-moth or the nests of the brown-tail moth are concerned.

It is safe to say first that the work which has been done since 1905 has greatly restricted the spread of both species, and especially that of the gipsy-moth. It is safe to say further that the living conditions in the infested territory have been greatly improved.

Neither gipsy-moth nor brown-tail moth are longer to be feared as shade-tree enemies or as enemies of orchards or gardens. Both have become relegated to the class of forest insects, so far as

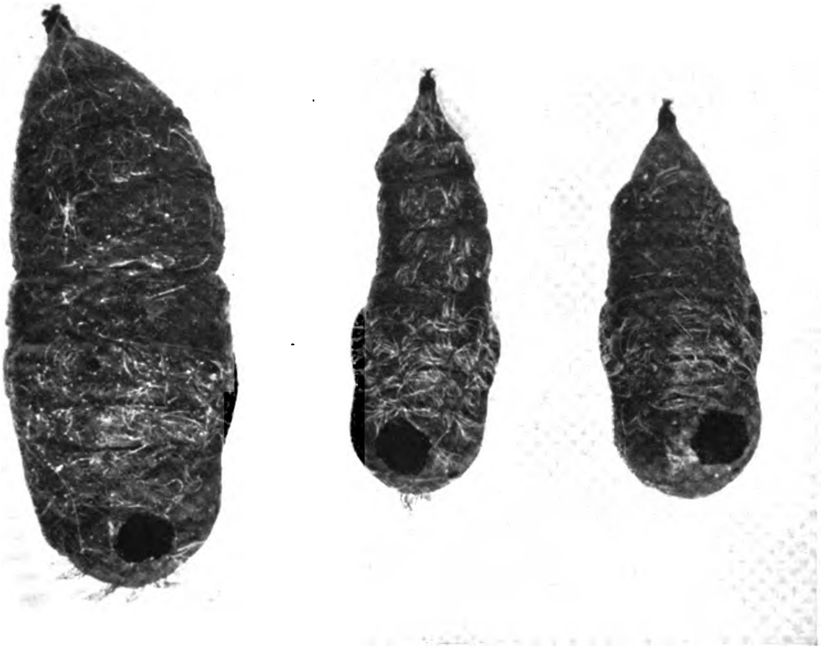


Photo from U. S. Department of Agriculture

CHRYSALIDS OF GIPSY-MOTHS WHICH HAVE BEEN DESTROYED BY PARASITES, PROBABLY *Calosoma sycophanta* (SEE PAGE 53 AND TEXT, PAGE 66)

their ravages are concerned, with the additional damage which the brown-tail moth does to summer resorts by virtue of the irritating rash produced on the skin of persons in its neighborhood by the hairs from the caterpillars.

FIGHTING LOCAL OUTBREAKS

But there has been some spread. The area now occupied by the brown-tail moth has been enlarged enormously toward the north and the east. The gipsy-moth has spread much more slowly, but still rather steadily, in practically all directions, though more to the north and east.

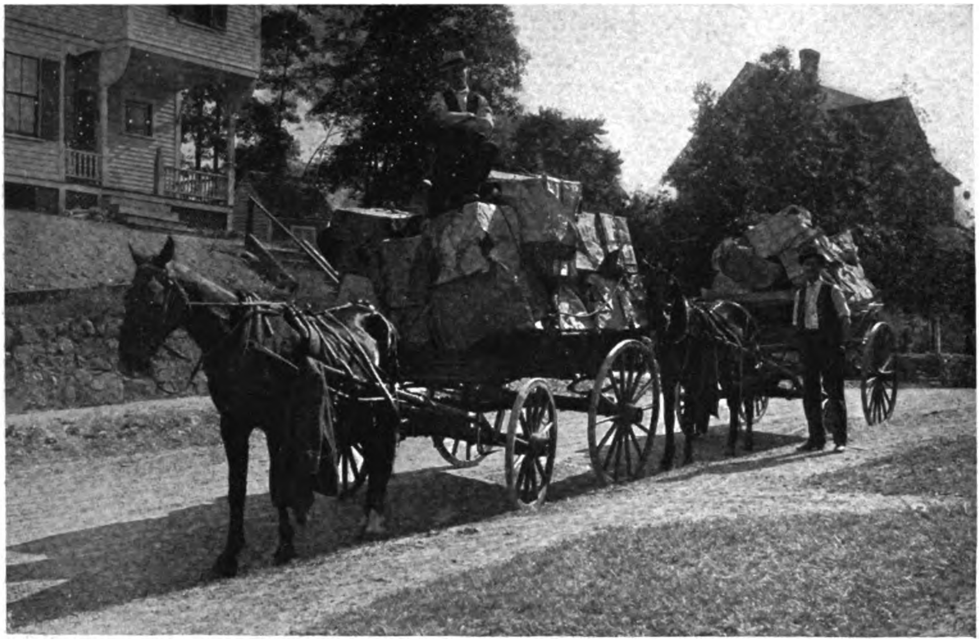
Four sporadic outbreaks of the gipsy-moth have been found outside of the regularly infested territory — two in Connecticut, one at Geneva, N. Y., and the fourth (only discovered in January, 1914) in the vicinity of Cleveland, Ohio. The New York outbreak has been stamped out; the Cleveland outbreak will probably be stamped out this year; those in Connecticut are thoroughly under control, will not be permitted to spread, and with some certainty will be annihilated.

We have referred to the conditions within the infested region as having improved. This has been due to actual exterminative work in the destruction of the egg-clusters of the gipsy-moth, in the burning of the winter nests of the brown-tail, in the destruction of the gipsy-moth caterpillars by spraying, by collecting them under burlap bands on tree trunks, where they are subsequently crushed, and by the general cleaning up of roadsides throughout the region.

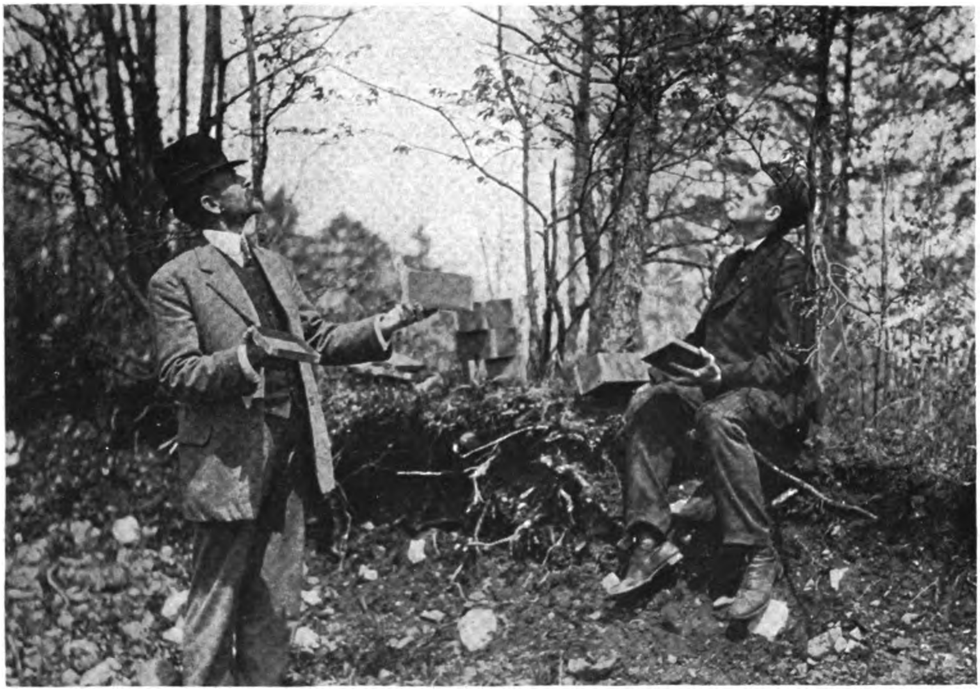
A number of species of the imported natural enemies (see pages 51 and 53) have accommodated themselves to New England conditions, have increased and spread, and during the past year probably destroyed more than 50 per cent of the gipsy-moths and brown-tail moths which hatched in the central New England region. Moreover, a disease has attacked the gipsy-moth caterpillars, and another those of the brown-tail moth, and these diseases are apparently becoming more widespread and virulent.

STUDYING FEEDING HABITS

The parasites and the diseases are working in the woodlands as well as along



EXPRESS WAGON-LOADS OF EUROPEAN PARASITES OF THE GIPSY-MOTH ARRIVING AT THE LABORATORY AT MELROSE HIGHLANDS, MASS.



Photos from U. S. Department of Agriculture

LIBERATING EUROPEAN PARASITES IN NEW ENGLAND WOODS TO DESTROY GIPSY AND BROWN-TAIL MOTHS

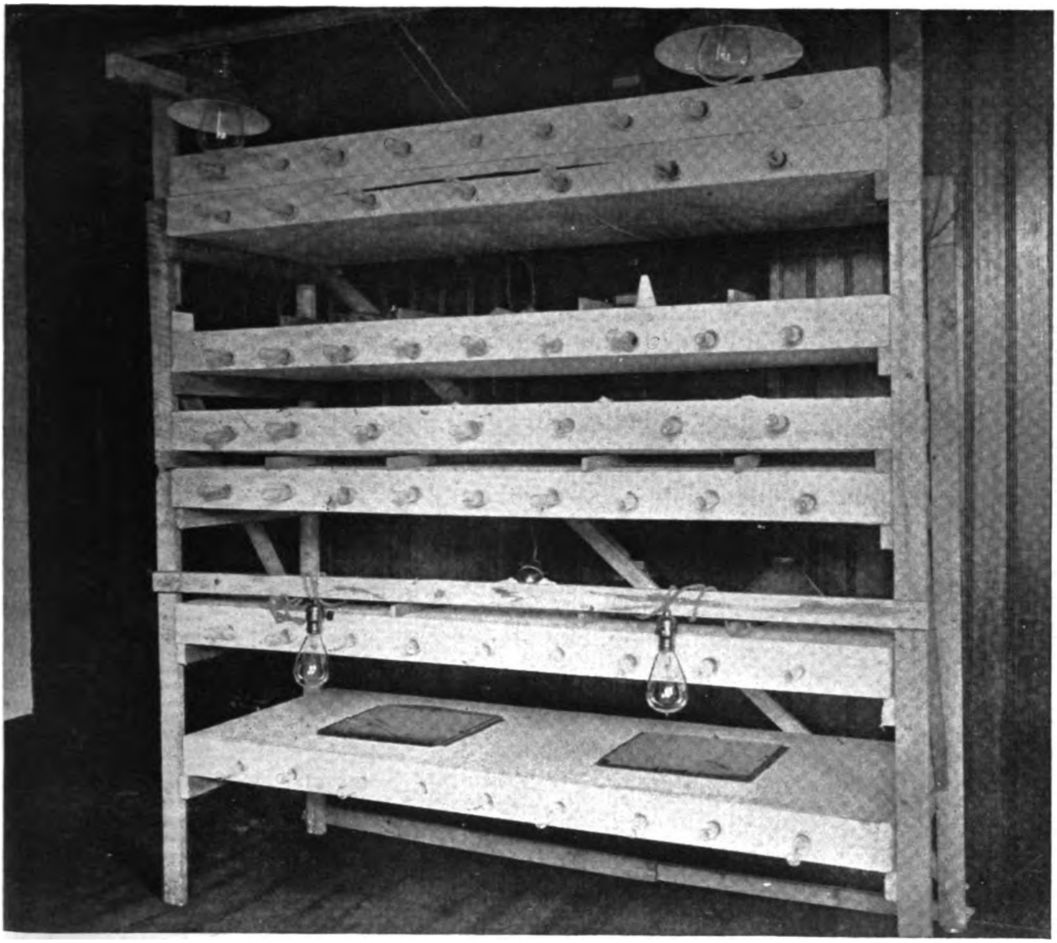


Photo from U. S. Department of Agriculture

TRAYS IN WHICH TINY FLIES, *Schedius* (EGG PARASITES), WERE REARED IN THE LABORATORY AT MELROSE HIGHLANDS, MASS.

Each tray is stocked with 1,000,000 gipsy-moth eggs. About 90,000 parasites were reared in each tray for colonization in the field in 1913 (see also page 66)

the streets and in the gardens and in the orchards, and the forest attack is becoming more and more alleviated by these means. But it is not intended that we should rely upon parasites and diseases alone to protect the forests. Careful studies of the feeding habits of the gipsy-moth in particular have shown that, although when full grown it attacks almost all sorts of living vegetation, when young it can live successfully upon but a few plants. It must grow large and strong before it can eat and assimilate the leaves of most trees. A pure stand of pine or any other conifer, for example, cannot be harmed by the gipsy-moth, and the same may be said of hickory, maple, chestnut, alder, beech, and of mixed forests of these kinds of trees; but where a mixed forest contains oaks and gray birches, then it will suffer, because these two kinds of trees are the preferred food plants of these destructive leaf-eaters.

It results therefore that practical methods of thinning can often be adopted that will almost perfectly protect a mixed forest, and experiments have shown that mixtures of chestnut, ash, red maple, pine, and hickory are practically uninjured by the gipsy-moth. In these cases the oak scrub has been cut out and the larger oaks and gray birch have been removed.

Photo from U. S. Department of Agriculture

INTERIOR OF PARASITE BREEDING SHED WHERE ONE MILLION TINY FLIES WERE REARED IN 1913: MELROSE HIGHLANDS, MASS. (SEE TEXT, PAGE 66)

In woodlands where the oaks predominate, however, the problem is a much more serious one and may mean ultimate reforestation.

In reaching the present rather promising situation, an enormous amount of work has been done. It must be realized that when, after a period of five years, the State of Massachusetts began once more, in 1905, to attempt to check the gipsy-moth, conditions within the infested territory were almost unlivable. The orchards and the shade trees were dying, the parks and the dooryards were stripped of all kinds of foliage in June, the wooded hillsides were brown when they should have been green, and in the villages and towns during the latter part of May and through June caterpillars were crawling everywhere—on the sidewalks, on the sides of houses, and even into houses. Methods of hand destruction were used in all of the infested towns. The new State law provided in general that each town should do its own work and should be recompensed by the State to the extent of one-half or more of the amount expended.

CONGRESS DECIDES TO HELP

When the moth began to spread beyond the boundaries of Massachusetts the Congress of the United States was importuned to make appropriations. By this time it had become evident that extermination was out of the question without the expenditure of enormous sums of money, and appropriations were subsequently made by Congress, not to attempt extermination, but to prevent, if possible, the further spread of both the gipsy-moth and the brown-tail moth.

The female of the gipsy-moth does not fly; its body is too heavy (see page 50);

and it was thought that the species spread only while in the caterpillar stage, by crawling upon trolley cars, upon automobiles and other vehicles, and upon the clothes of pedestrians, and that it was thus carried for the most part along the main traveled highways and thus gained a large spread.

In consequence, for several years the attention of the government workers was focused upon these main traveled roads, and the roadsides were cleaned up to a depth of from 50 to 100 feet, and the trees that were left were banded and sprayed, leaving the roadsides in such condition that there was no possibility of caterpillars falling upon passing vehicles or persons. It is undoubtedly true that by this means a far greater spread than has occurred was prevented.

A MOTH AËROPLANE

More recently, however, it has been discovered that a very important means of spread had been overlooked. As the young caterpillar of the gipsy-moth hatches from the egg it spins down on warm days suspended by a silken thread, is caught up by the wind and carried sometimes for miles before it succeeds in attaching itself to a tree or shrub. Large-scale experiments in the last two or three years, conducted by erecting enormous wire screens (see page 41) at various distances to the windward from infested woods, the screens being coated with a sticky substance, have shown that many young caterpillars are carried in this way to a distance of six miles or more.

This discovery has altered the methods of endeavoring to prevent the further spread of this insect, and as a result the operations are now carried on most intensively along the border of spread, especial attention being given to colonies that occur on hillsides, since young caterpillars from these colonies are more likely to be spread to great distances by the wind.

Another method of preventing the spread of the gipsy-moth is the inspection of products shipped from the infested region. This measure is very important and has been carried on with increasing care year after year. A perfected system has been inaugurated by the comparatively recently established

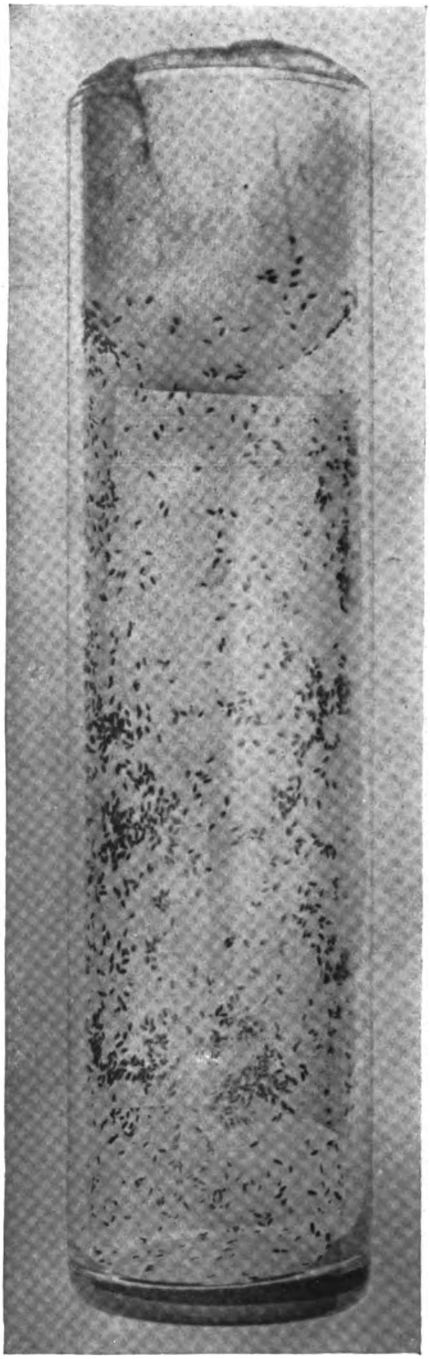


Photo from U. S. Department of Agriculture

THIS TUBE CONTAINS 1,600 TINY FLIES, *Schedius kuvanæ*

The flies, when liberated, will deposit their eggs in the eggs of the gipsy-moth, thus destroying the latter (see page 66).

Federal Horticultural Board, which has provided an absolute quarantine of the rest of the country against the region inhabited by the gipsy-moth and the brown-tail moth.

METHODS OF TRAVEL

This means that no plants from the nurseries of this region, no Christmas trees, and no plant products, such as railroad ties, cord-wood, telephone poles, and no objects of any kind upon which the egg-masses of the gipsy-moth might be laid or upon which the winter nests of the brown-tail moth might occur, can leave the territory without a certificate of inspection which certifies that they are free from these insects.

This, of course, means a great deal of work. The gipsy-moth passes the winter in the egg stage, in clumps of eggs numbering from 300 to 500, and these clumps are attached to all sorts of objects. Take, for example, the pile of boards shown on page 41. These boards are sawn and piled, and yet moths from the adjoining trees have laid their eggs all over them. This lumber being shipped out of the district would carry potential damage wherever it might go.

Let us suppose that an apple tree containing gipsy-moths were situated at the edge of a strawberry patch. The strawberries are picked, and then are often boxed under the shade of the tree, with the result that the crates in which they are placed may carry the eggs of the gipsy-moth.

The brown-tail moth, on the other hand, passes the winter in silken nests in which leaves are usually enfolded, several hundreds of the young caterpillars being found in each nest. These nests are usually attached to the terminal twigs of trees, but are often found upon nursery stock; in fact, during 1909 many hundreds of these webs were brought in from France attached to imported nursery stock.

The female of the brown-tail moth, unlike that of the gipsy-moth, is a strong flyer, and spreads directly by flight more rapidly than it is as a rule carried in its winter nests. It happens in New England during June that on some nights the brown-tail moth flies in such extraordinary numbers that of a morning the sides of buildings and electric-light poles appear almost white (see page 40).

They are attracted to light to a considerable extent, frequently enter houses and, what is worse, trolley cars and railway cars, and in the latter are apt to be carried for much greater distances than they could possibly fly. In the same way along the seacoast they will fly upon vessels just starting away, and so may be carried along the coast for very considerable distances.

Just as this is being written the news comes that the brown-tail moth has been found during the past winter, probably as a result of last summer's flight, to have obtained foothold on Fishers Island, near the Connecticut mainland; at Orient Point, Long Island; at three points on Shelter Island, and still farther south, on the southern of the two eastern prolongations of Long Island, at six points between Sag Harbor and East Hampton. These points are all in New York territory, and the authorities of that State are fully alive to the danger, so that vigorous efforts are being made to exterminate these incipient colonies.

The brown-tail moth fortunately is not a very difficult pest to control. It is handled by late spring and early fall spraying with arsenicals, but more readily on low-growing trees and shrubs by cutting off and burning the characteristic winter nests, which are very conspicuous in the autumn after the leaves fall.

BROWN-TAIL RASH

In coming into Long Island territory the principal money loss which the brown-tail will cause is not by the destruction of foliage, but by the prevalence of what has come to be known as the "brown-tail rash," which keeps people away from summer resorts where this insect is prevalent. The hairs of the brown-tail caterpillar are finely barbed and brittle (see page 52), and where the caterpillars come in contact with the human skin these hairs enter the skin pores, break off, and cause a severe irritation.

Indeed, it is not necessary for the caterpillar to come in contact with the skin;

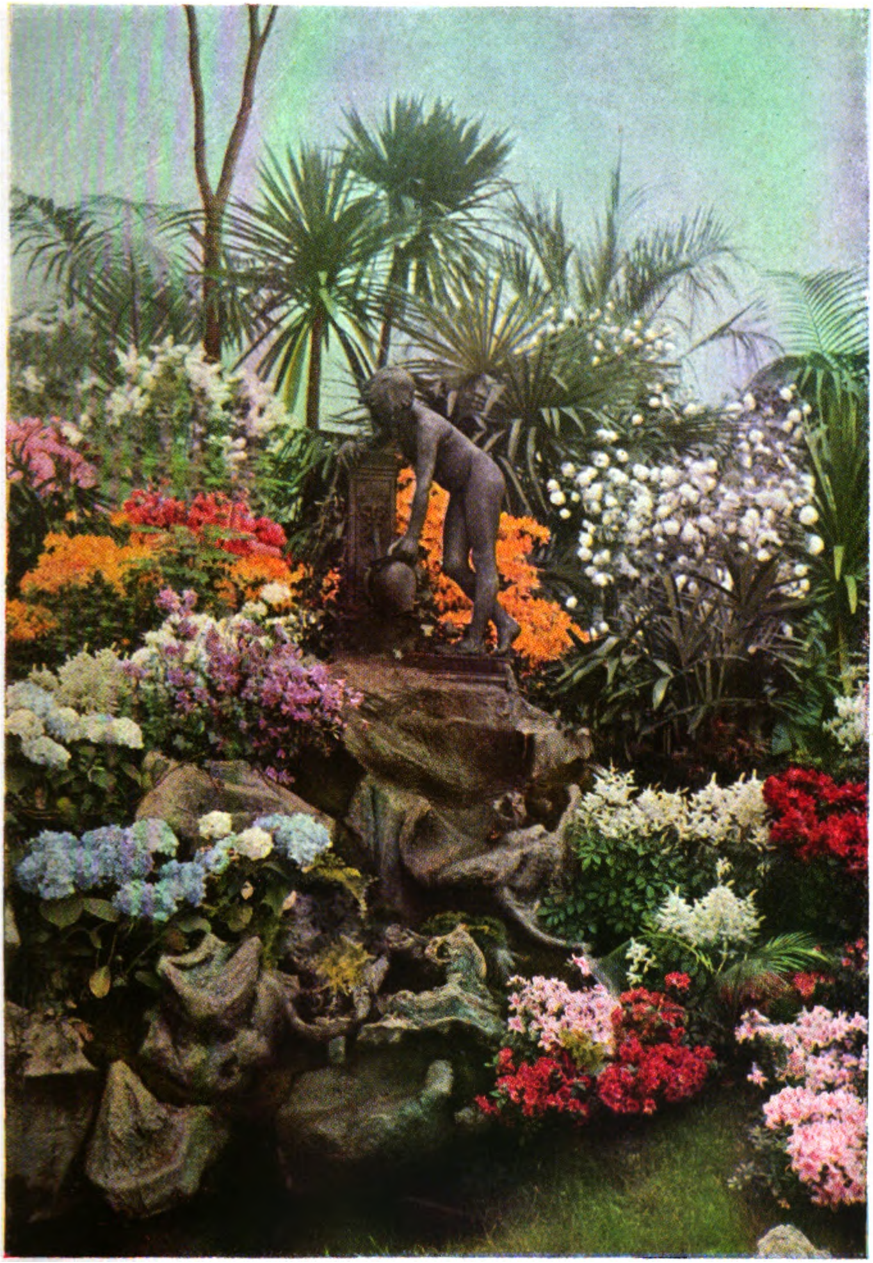
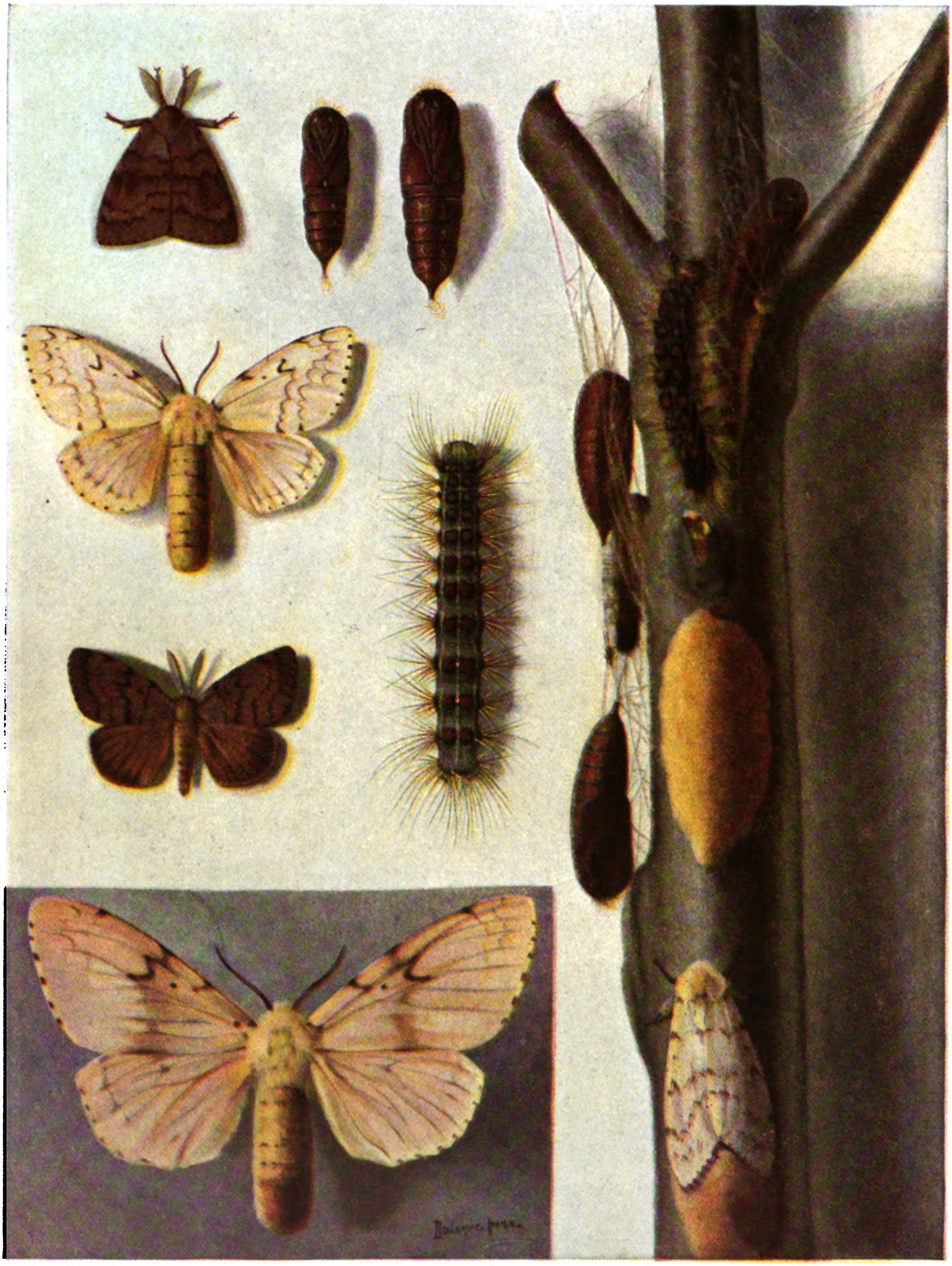


Photo by Paul G. Guillumette

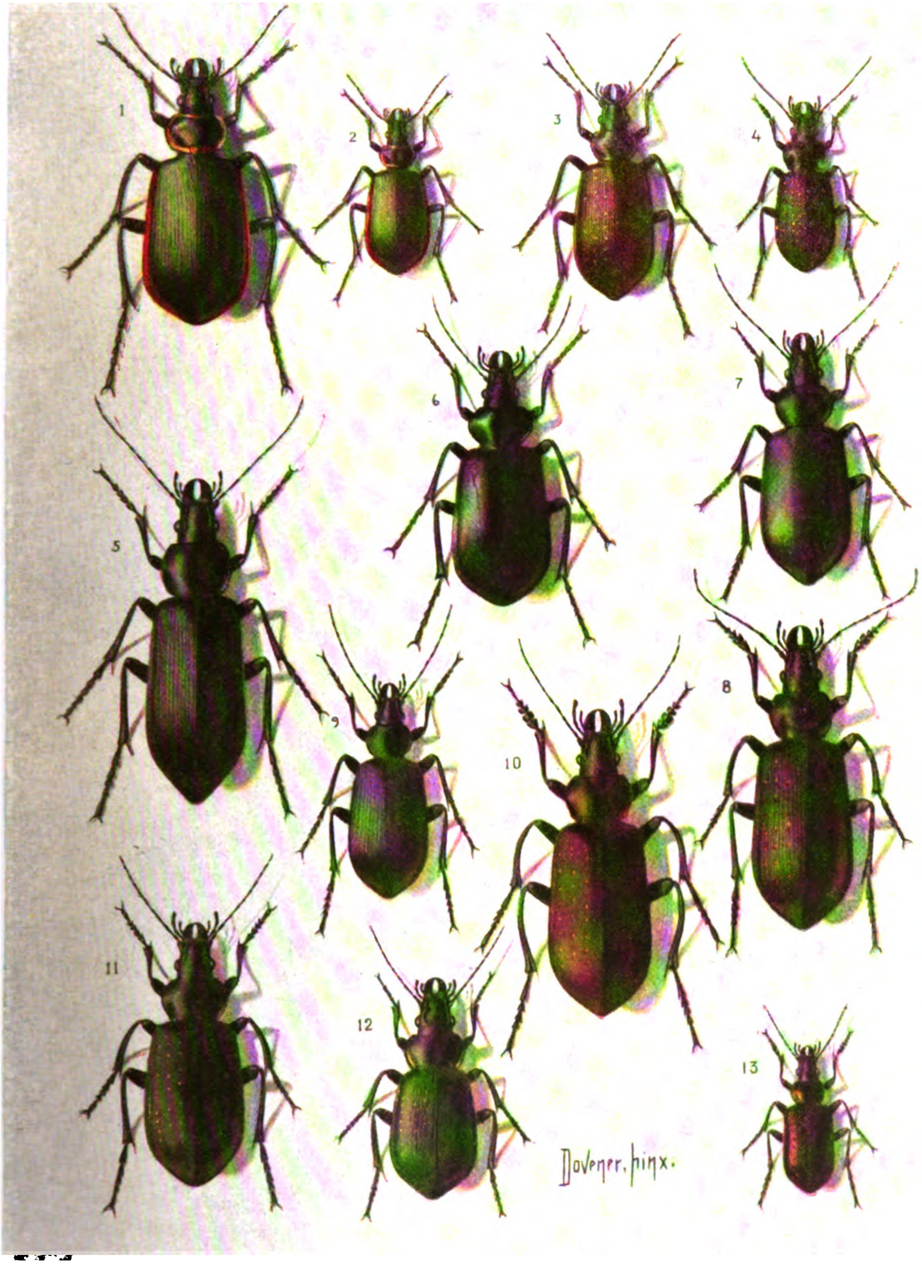
A GHENT FLOWER GARDEN

The city of Ghent has the reputation of being the "Flower Garden of Belgium." Some of the finest specimens of selected varieties of flowers anywhere to be found are bred at Ghent, and King Albert I is the patron of the occasional flower shows where they are exhibited in competition with the thoroughbred flowers of England, France and other parts of Belgium. This photograph, taken on a Lumiere Autochrom plate, represents a scene in the last exhibition in the Horticultural Hall at the World's Fair Grounds at Ghent. The picture makes one wonder which the more to admire—the beauty of the flowers or the power of the camera to interpret the luxuriant colors so faithfully.



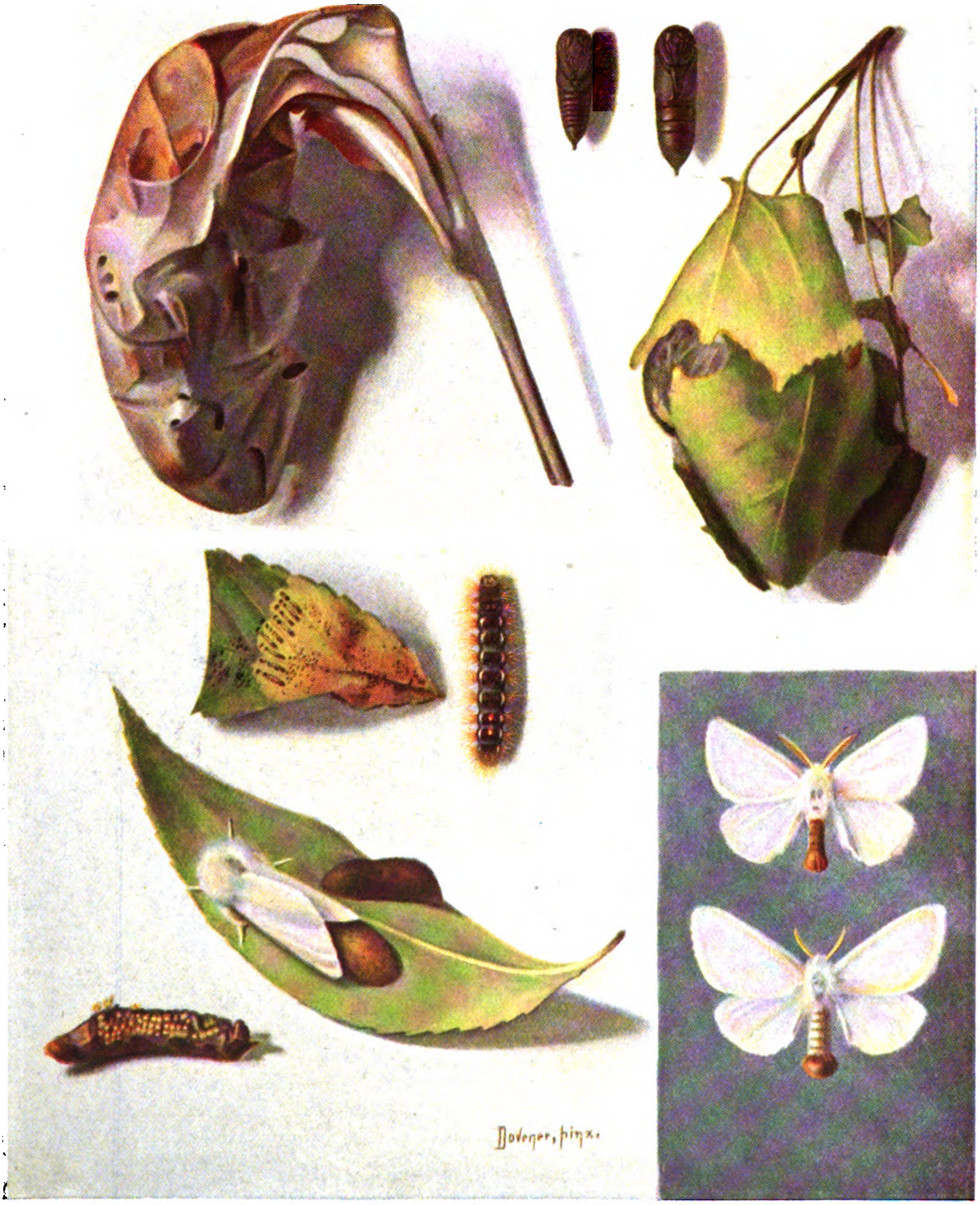
THE GIPSY MOTH (Porthetria dispar)

The dark brown moths are the males, and the whitish ones with the dark markings are females. The one at left below is enlarged. On the branch at right, below, the female is laying her egg-mass. An exposed egg-mass occurs above her. The other figures represent the caterpillars and pupæ. See article by Dr. L. O. Howard printed elsewhere in this number.


1
2
3
4
5
6
7
8
9
10
11
12
13
Dovener, pinx.

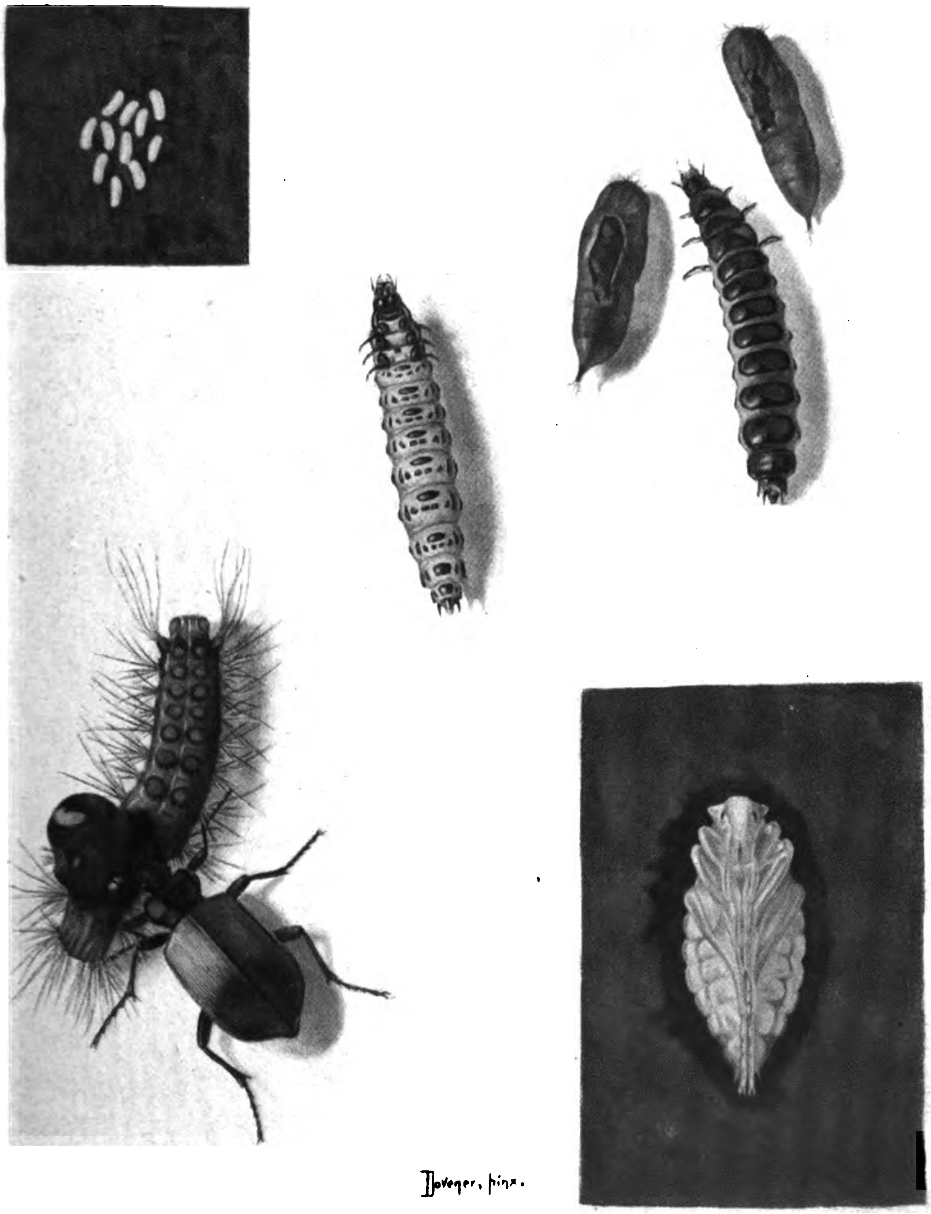
ENEMIES OF THE GIPSY MOTH

Several species of ground beetles brought to New England from different parts of the world to destroy the gipsy moth and brown-tail moth caterpillars. Only one of them has become established in New England.


Dovener, pinx.

THE BROWN-TAIL MOTH (Euproctis chrysorrhœa)

The male and female moths below, at right, female laying her eggs, at left. Winter nest above at left; pupæ above near center; larval nest in autumn at right; full grown caterpillar at center, with newly-hatched caterpillars at work on leaf just to the left. Egg-mass below at left.


Dovener, pinx.

A BEETLE DESTROYING THE BROWN-TAIL MOTH

(CALOSOMA SYCOPHANTA)

The most successful of the introduced enemies of the gipsy moth and brown-tail moth. Adult beetle destroying a gipsy moth caterpillar, below at left; pupa, under ground, at right; eggs, above left; gipsy moth pupæ and the Calosoma larvæ that destroyed them, above at right.

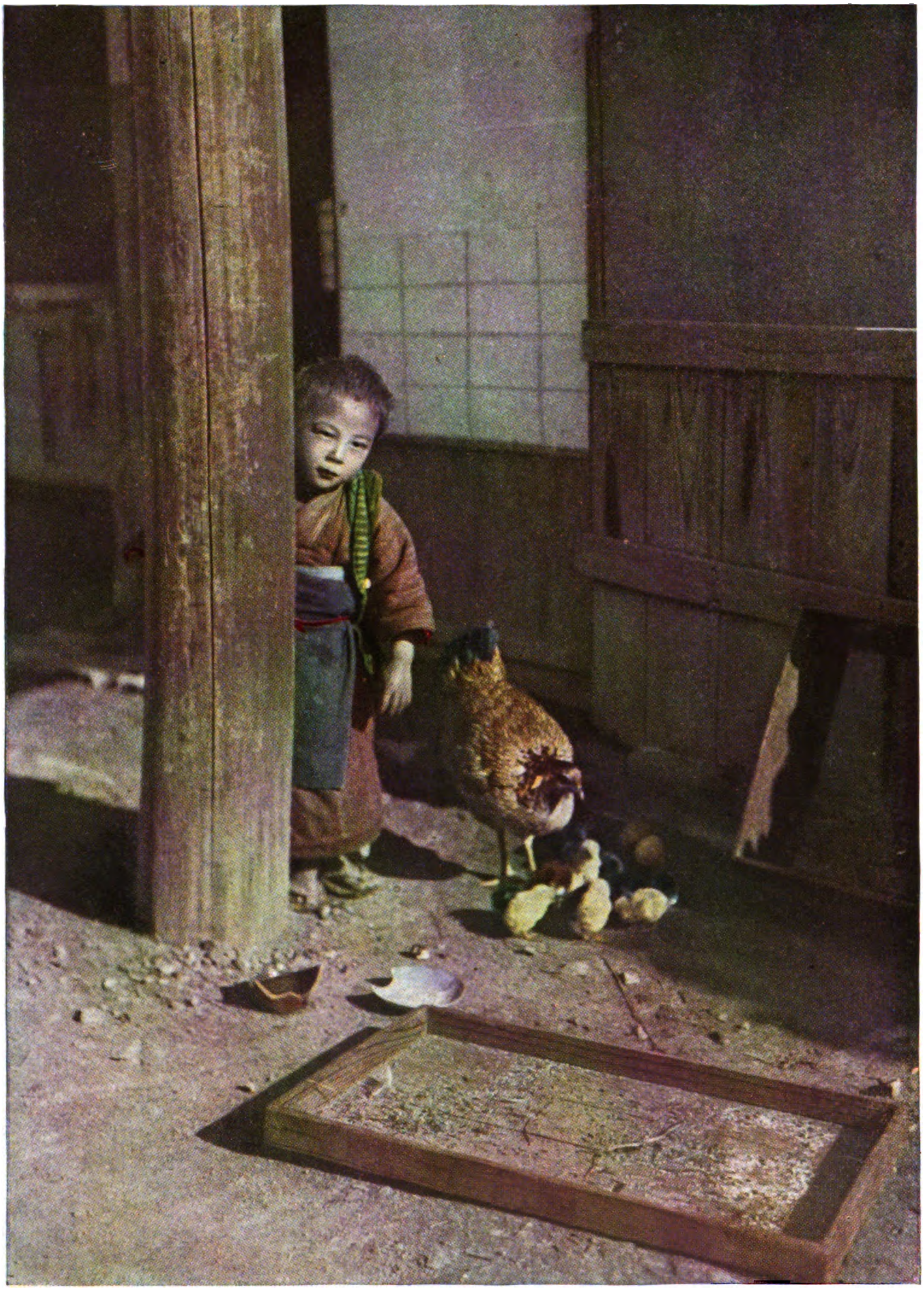


Photo by Eliza R. Scidmore

THE YOUNG FANCIER IN JAPAN

Some day this little poultry fancier may grow up into a soldier whose first desire will be that the fates may order his blood to be shed for his country, but as yet war's wild alarms have not stirred his soul.

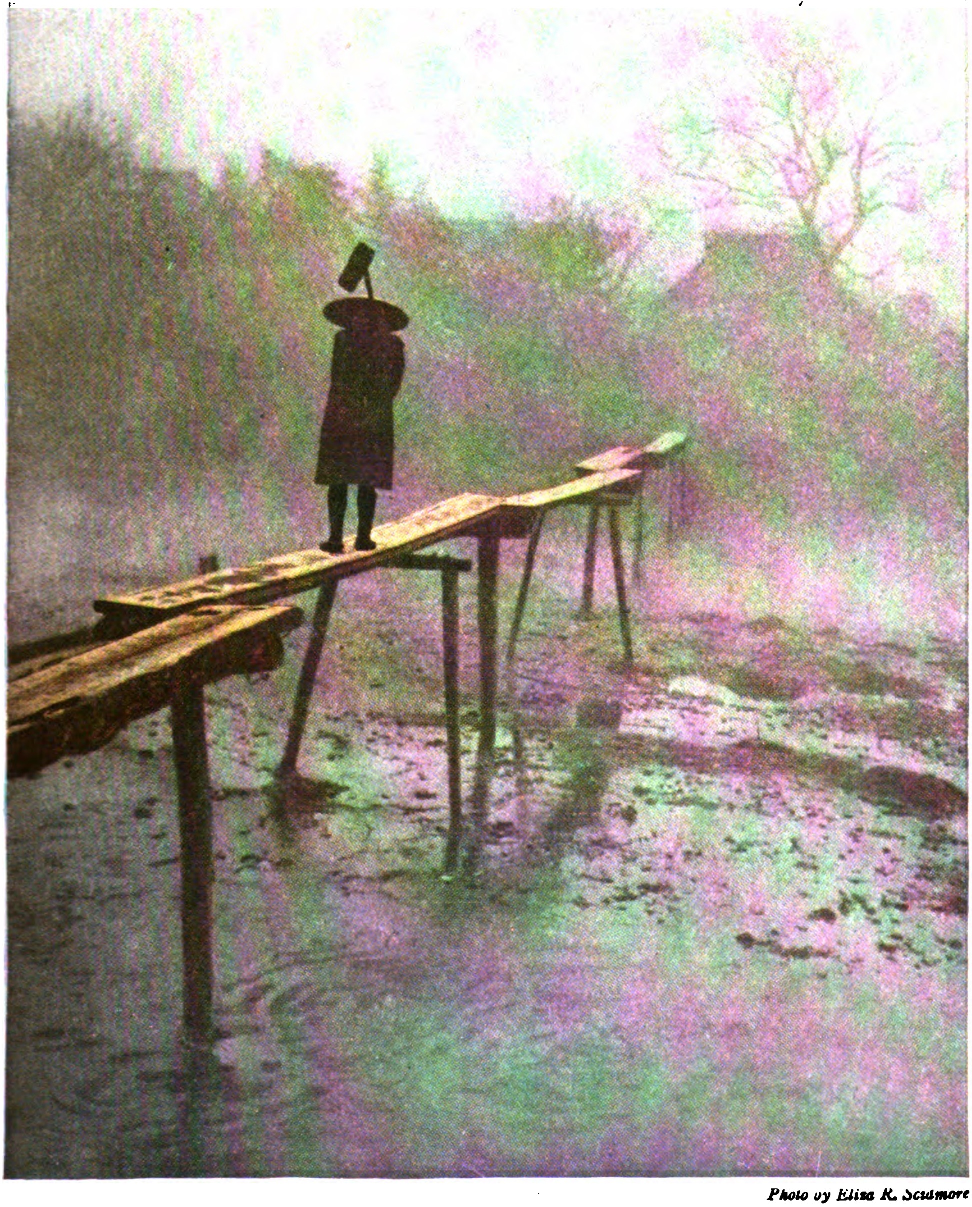


Photo by Eliza R. Scidmore

CROSSING THE BRIDGE, JAPAN

The coolie is wending homeward his weary way after a strenuous day in the rice fields. From the hour of dawn to the time when the evening shadows deepen he must work throughout his life for the bare boon of existence, for his "hire" is but a pittance.

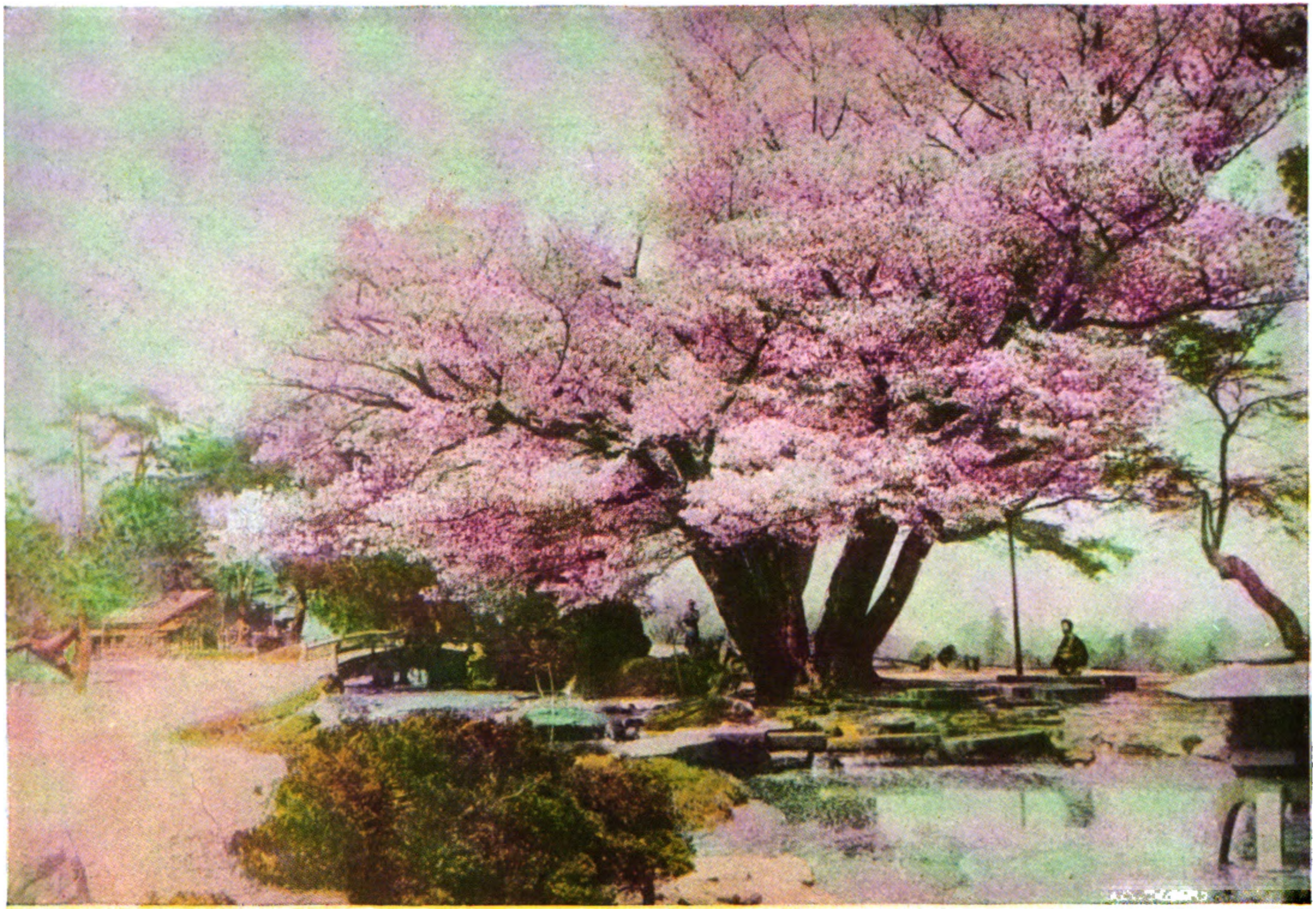


Photo by Eliza R. Scidmore

THE MOST BEAUTIFUL TREE IN JAPAN

This tree enjoys the reputation of being the most beautiful cherry tree in Japan. It stands in the public garden at Kanazawa, on the West Coast.

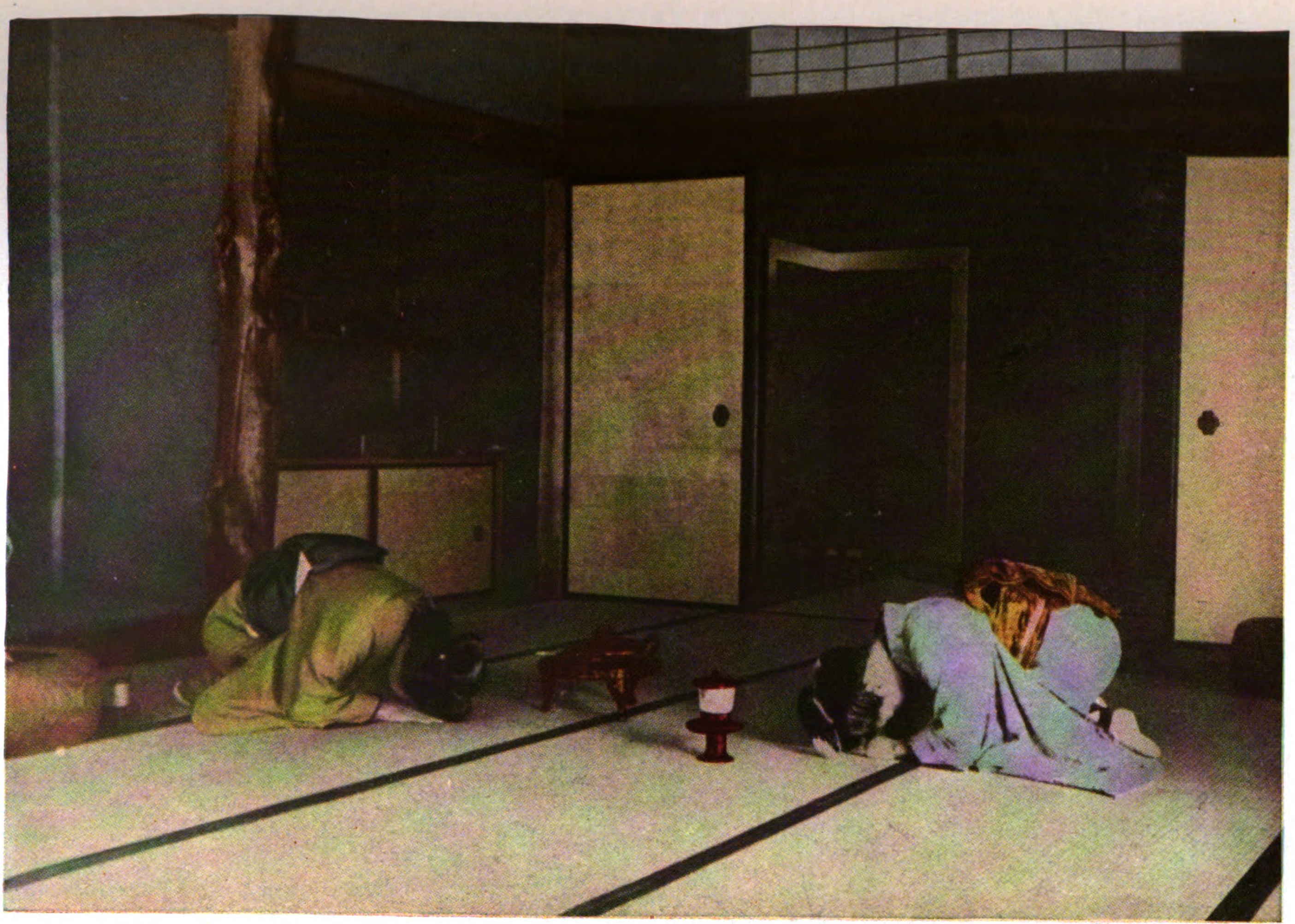


Photo by Eliza R. Scidmore

A CEREMONIOUS GOODBYE

When a formal call is at an end saying "goodbye" carries with it more ceremony, if not more sincerity, in Japan than in Western countries.

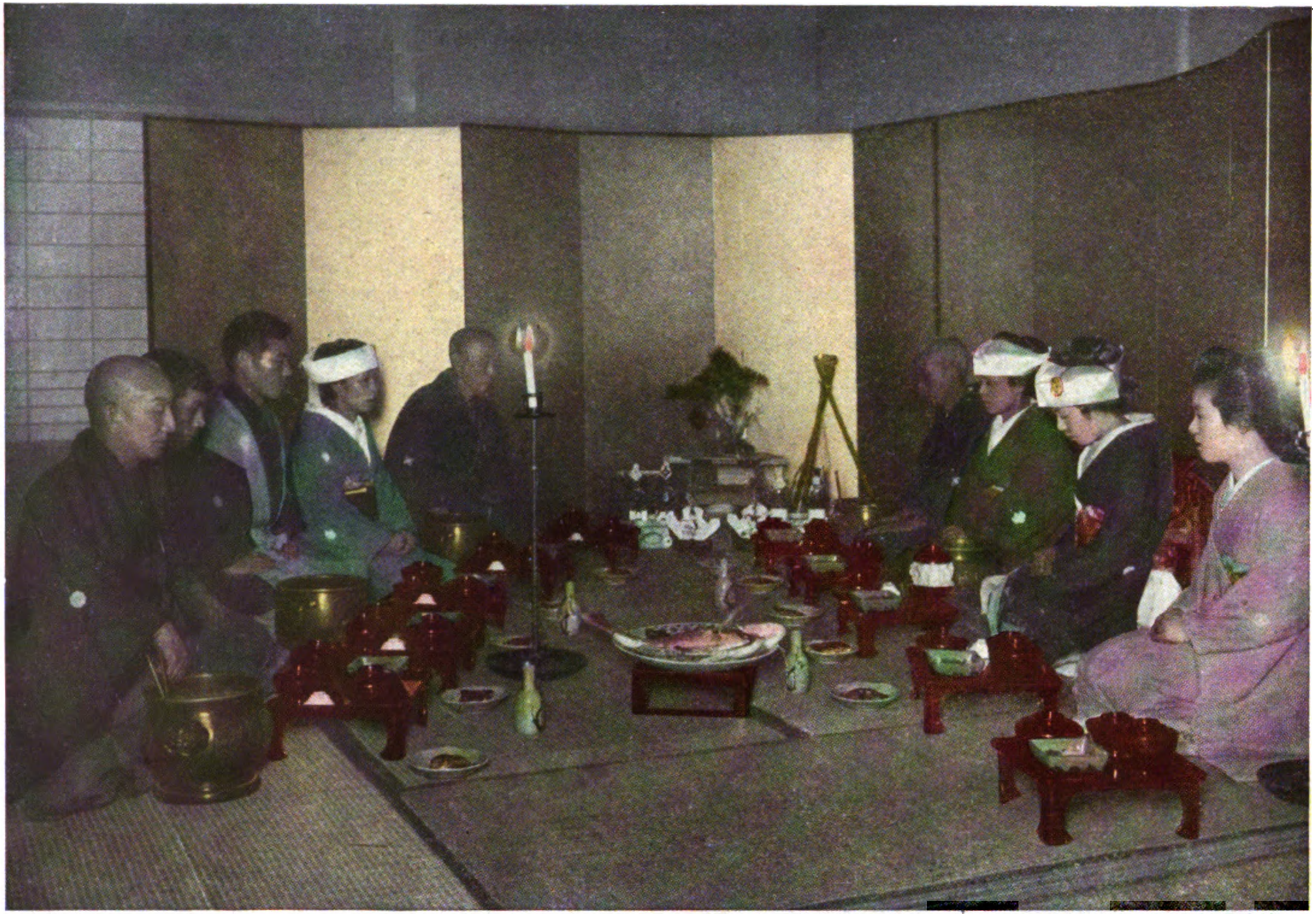


Photo by Eliza R. Scidmore

A JAPANESE WEDDING FEAST IS A VERY SERIOUS OCCASION

The bride is the demure little lady second from the end on the right. To her right sits her mother and father. The groom is the third figure on the left, and to his left sits his mother and father.

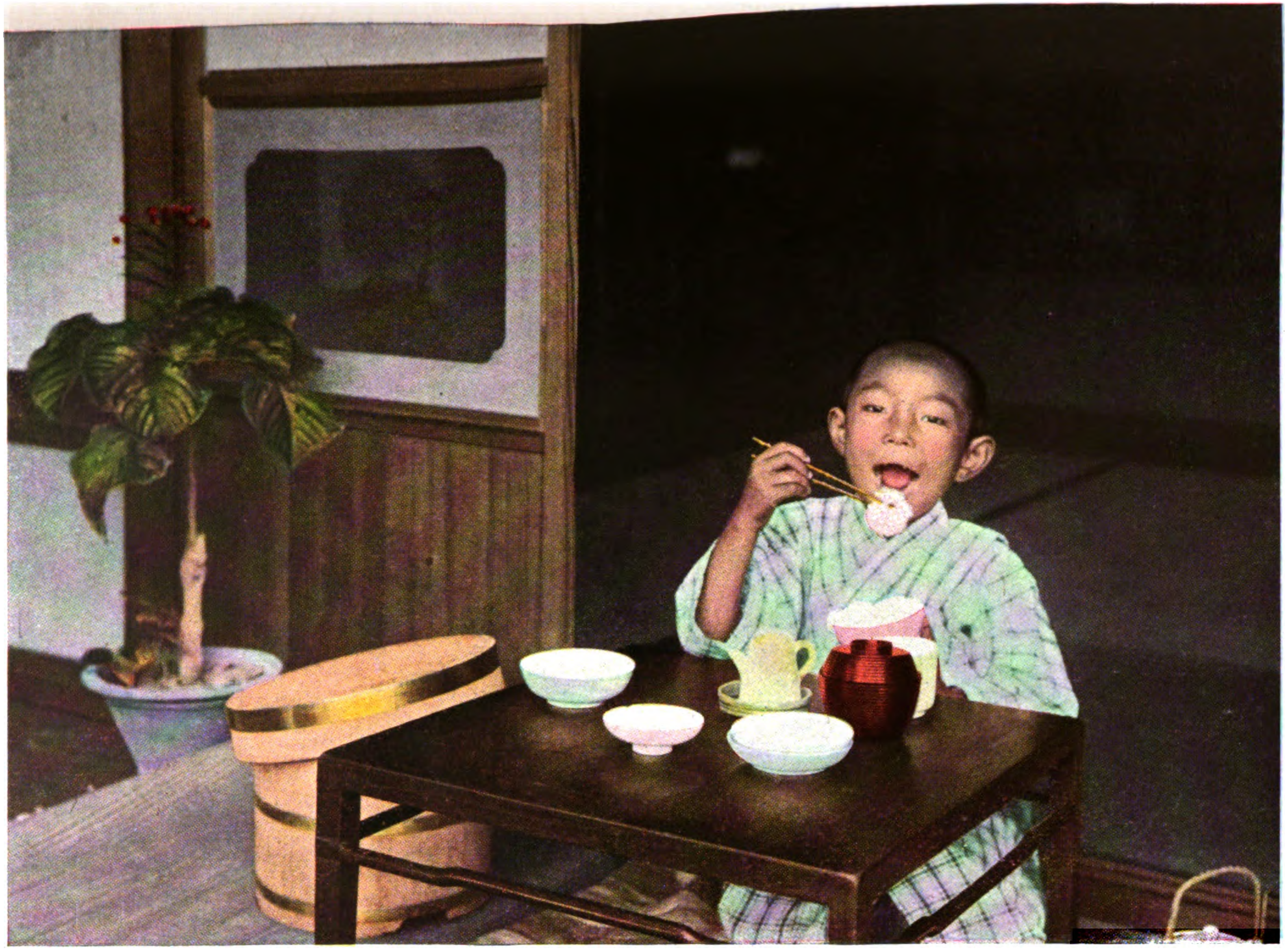


Photo by Eliza R. Scidmore

AT MEAL TIME IN JAPAN

There is a proverb in Japanese which says: "If you love your children give them lots of whippings; if you hate them, lots to eat." This youngster seems to have had no evidences of parental "love" showered upon him lately, as he eats his "honorable rice."

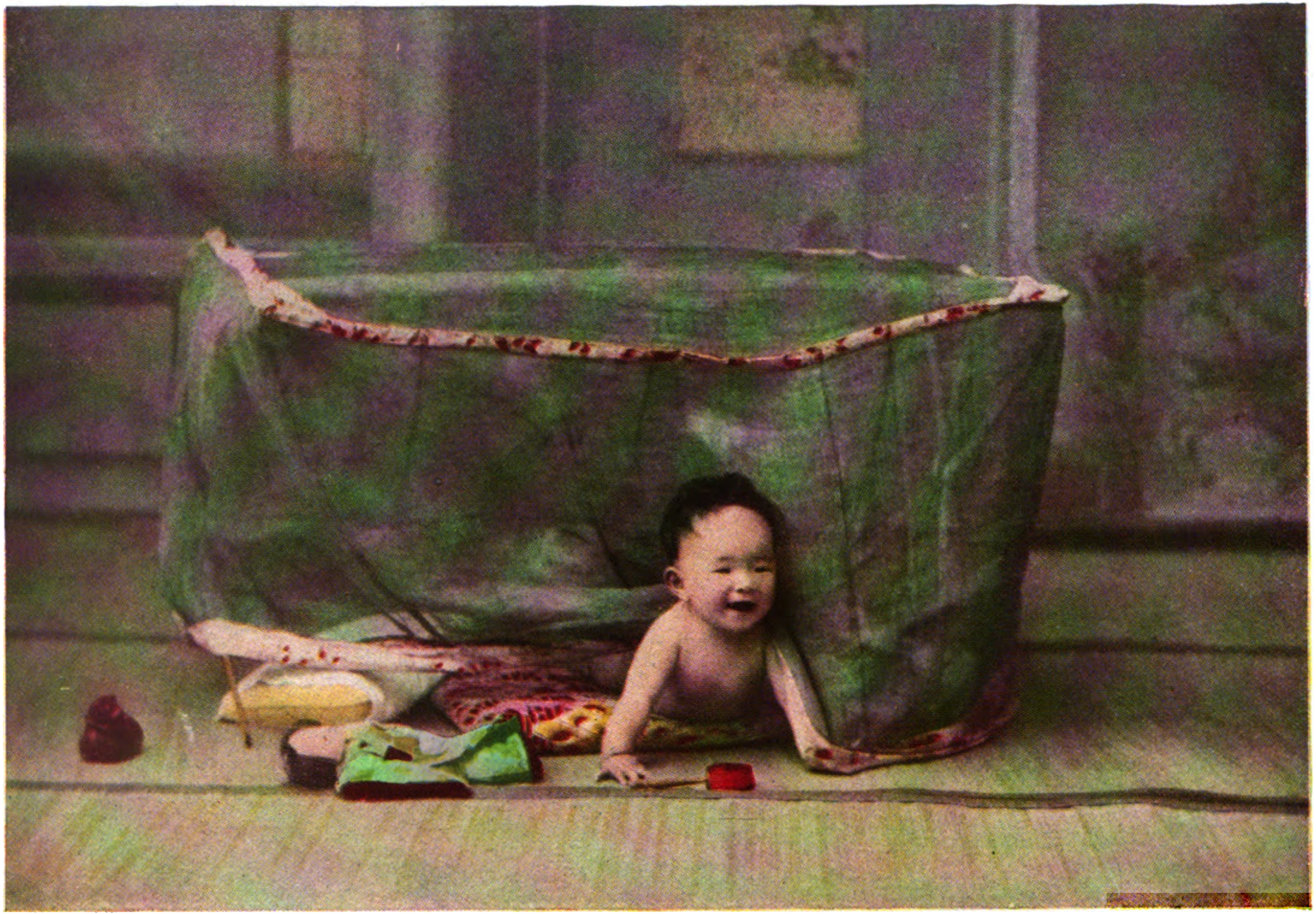


Photo by Eliza R. Scidmore

THE RISING SON OF NIPPON

Young Japan is usually up early in the morning. His bed may not be as comfortable as the downy crib of Young America, his doll may not be as attractive as some on this side of the sea, and his rattle may not be of silver, but withal he usually is the picture of contentment and patience.

Photo by Eliza R. Scidmore

REBELS AT THE BATH

The Japanese child has no fine porcelain bathtub like the American baby possesses. His is a little brass pan, and in this particular instance the water seems to be too cold to please him.

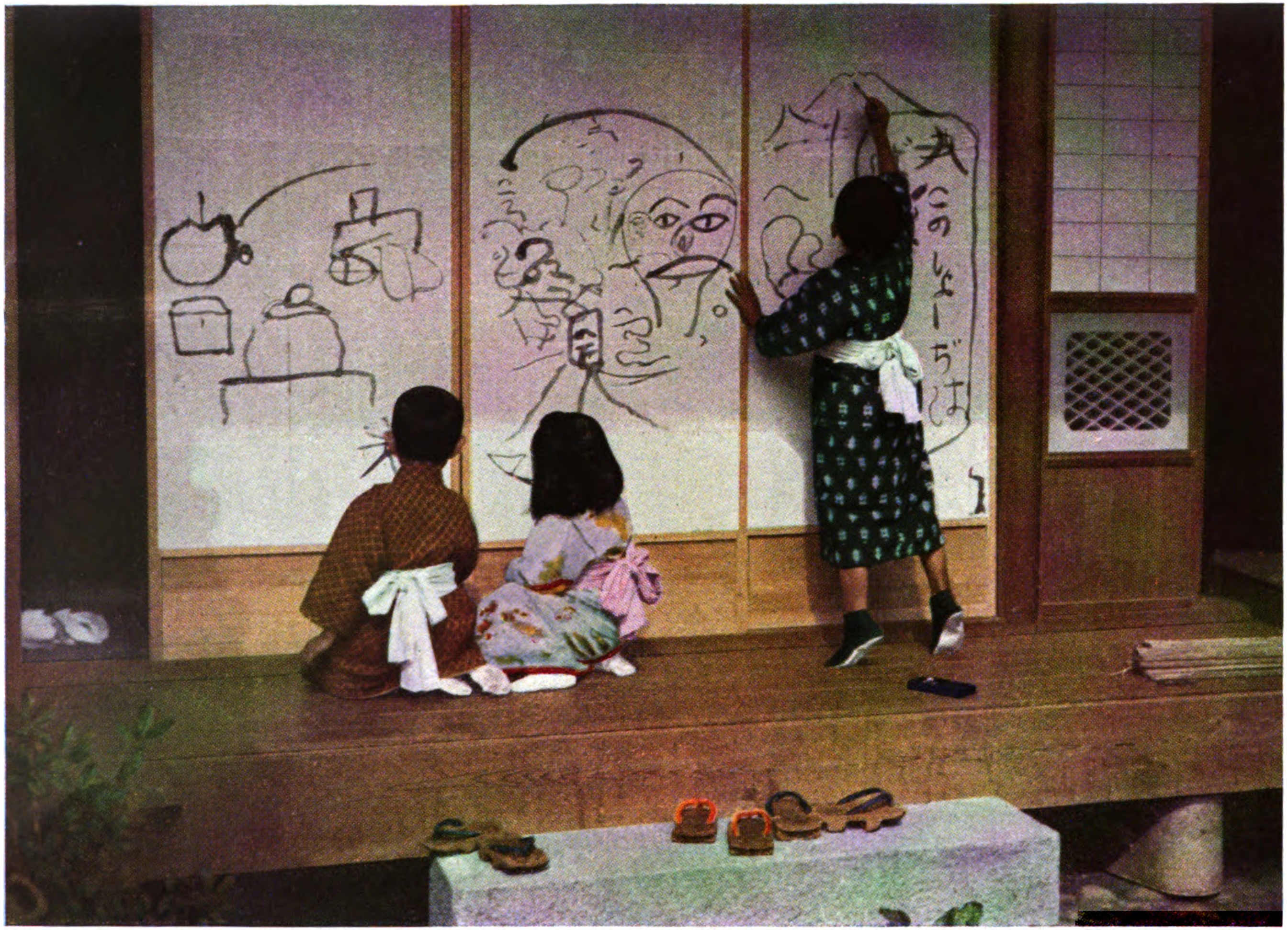


Photo by Eliza R. Scidmore

YOUNG ARTISTS IN JAPAN

Before the paper-hanger comes at the frequent house-cleaning times in Japan the children are allowed to draw pictures on the old paper soon to be removed.

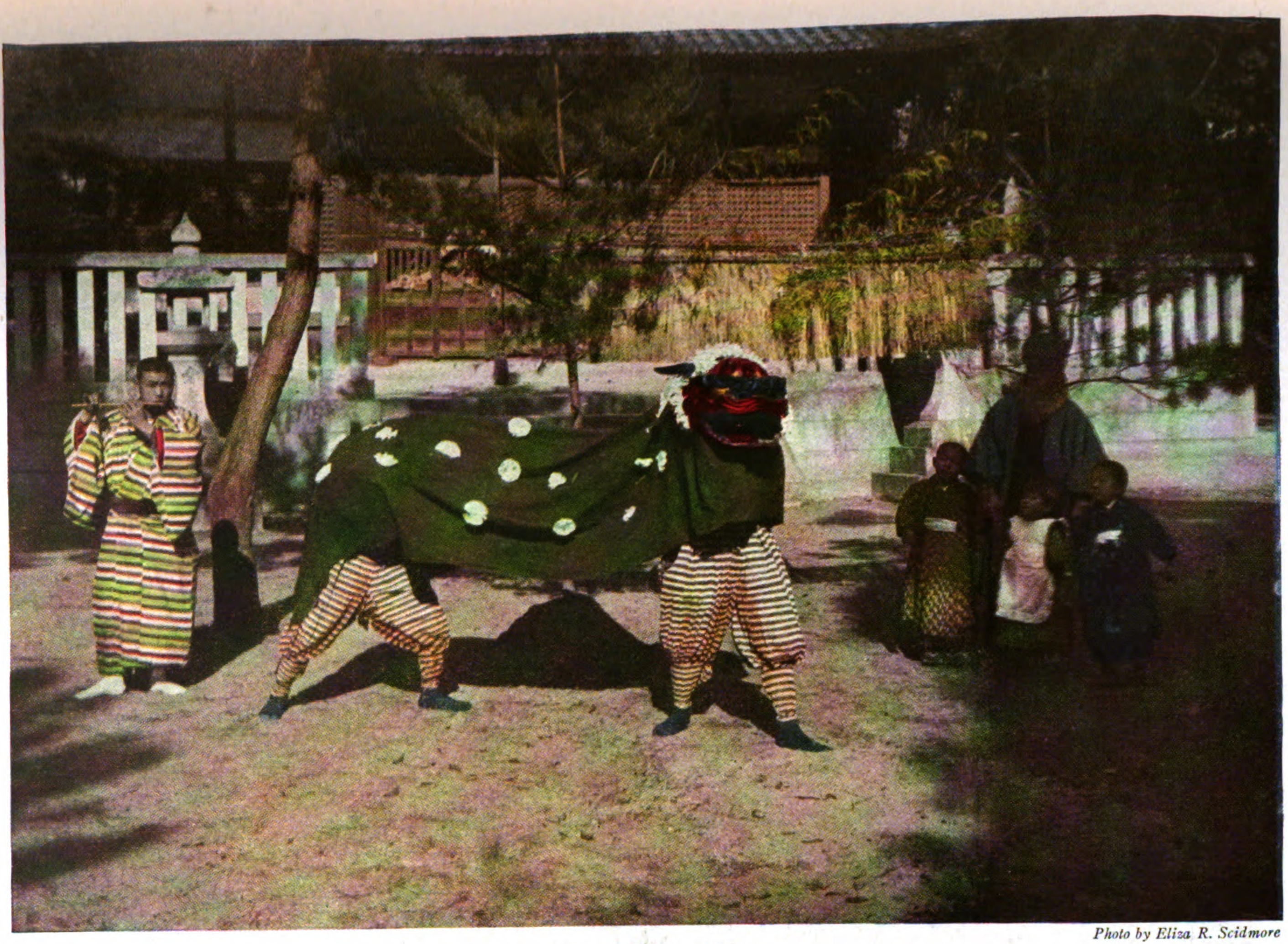


Photo by Eliza R. Scidmore

THE GARDEN FETE

No child's garden party ever pleased children more than the "animal dances" to the tune of the piper in the Japanese garden fete. It gives them a thrill that is equalled only by the American circus parade.

Photo by Eliza R. Scidmore

THE FLOWER GATHERER

In Japan one sees thousands of these bright-faced, flower-kimonoed little children among the blossoms of the garden, and feels that they live the spirit of their clothes and of the flowers.

at certain times of the year hairs are actually floating about in the air. At the time of the caterpillars' change of skin, and particularly at the time of the spinning of the cocoon and the final change, certain of these hairs appear to become loosened in such a way that they are carried by the wind. Some people have been made seriously ill by this so-called rash and it is the cause of great annoyance.

The prevalence of the brown-tail in the New Hampshire woods has undoubtedly lessened the pleasure of many people in their summer camps. Persons engaged in removing the nests from the trees in the winter time, carrying them away to be burned, also suffer from this rash, although the trouble is not so great in the winter time as in the summer, since during warm weather the pores of the skin are more open and receptive to the hairs.

A large part of the popular feeling in New England that the brown-tail must be exterminated is due quite as much to the prevalence and annoyance of this rash as to the loss of vegetation from the work of the caterpillars. While it is true that most of the Long Island summer resorts are seaside resorts, where there is not much foliage, still there are others where the presence of the brown-tail moth will result in deterring visitors.

Further than the actual harm to the skin, the broken hairs which float in the air when the caterpillars or webs or cocoons are disturbed also cause severe internal irritation and poisoning. The death of one man employed in the moth work in New England was due to severe internal poisoning of this kind.

Underclothes and bedding put out upon the line in caterpillar season collect the floating hairs and when used may result in serious poisoning. Doctor Tyzzer, of the Harvard Medical School, has investigated this rash, and concludes that the barbed hairs not only cause a mechanical irritation, but that they contain a poison which acts directly on the corpuscles of the blood.

No remedies suggested are wholly efficacious. Applications which are cooling to the skin, such as witch-hazel or alcohol, allay the irritation to some extent and reduce the suffering. No effective remedy has been found for internal irritation. A formula which has been in frequent use in New England and which is good as a skin application is:

Menthol	10 grains
Zinc oxide.............	2 drams
Lime water............	8 ounces
Carbolic acid...........	15 drops

SOME NATURAL ENEMIES

Especially interesting and important among the imported natural enemies of both the gipsy and brown-tail moths are the Calosoma beetles, and notably *Calosoma sycophanta* (see page 53). We have a number of species of the genus Calosoma in the United States, but they are distinctly ground-beetles, whereas in Europe *Calosoma sycophanta* climbs trees readily, and its larvæ also climb the tallest trees in search of such leaf-feeding caterpillars as it may find crawling on the trunks and larger branches. Early attempts to introduce this insect into the United States through correspondents were failures.

One naturalist in the south of France once sent over a package in which he separated the individual beetles in matchboxes, putting in each box a meal-worm for food for the beetle. Unfortunately, on arrival in Washington, it was found that in every case the meal-worm had killed the beetle. There were many failures until the best method of sending by mail was discovered, and since that time it has been possible to bring over large numbers in living and healthy condition.

In all, 4,046 living specimens of *C. sycophanta* have been imported from Europe. Sixty-seven per cent of these beetles were liberated in field colonies and the balance were used for experimental and reproduction work. So successful has been this rather difficult work, under the direction of Mr. A. F. Burgess, of Boston, that this beetle now occupies a very large territory in New England, and undoubtedly several millions were at work last summer.

Everywhere through the woodlands about Boston these beetles were to be found in nearly all stages actively at work destroying caterpillars of the gipsy-moth and the brown-tail moth, as well as native species, while it was difficult to lift a piece of loose bark from an old tree without finding dead pupæ of the gipsy-moth bearing the characteristic slit, shown on page 53, made by the jaws of the Calosoma larvæ.

A number of other species of Calosoma have been brought in from Europe, as well as from Japan and from different parts of the United States, and liberated in the infested territory. None of them, however, is worthy of mention in comparison with the *Calosoma sycophanta,* which has undoubtedly become a permanent denizen of our country and a most beneficial one. Millions of injurious caterpillars will be devoured by them this summer.

It will not be necessary to particularize about the numerous species of true parasites that have been imported. They have been brought in from many different countries, some of them by our own trained men sent out for the purpose, some by paid foreign agents, and very many of them—and this is most interesting—by officials of foreign governments, who have taken no end of trouble to aid us, not only on account of their interest in this wholesale experiment, but as an act of official courtesy to the United States. And it is worthy of note that one of the great amateur entomologists of Europe—M. René Oberthür, of Paris and Rennes—has been of the utmost assistance through his fertile suggestions and active work.

THE EGG-EATING FLY

One extremely interesting parasite, however, may be especially mentioned, namely, the Japanese egg parasite of the gipsy-moth, known as *Schedius kuvanæ,* which the writer had great pleasure in naming after Prof. S. I. Kuwana, of the Imperial University at Tokyo. This parasite is a very minute Chalcis fly, so small as to undergo its entire development in a single gipsy-moth egg. Its existence in Japan was unknown until the demand for parasites for America began.

The first specimens were reared from Japanese eggs sent to this country in December, 1908, and others issued in April, 1909. They bred rapidly, laying their eggs in American gipsy-moth eggs brought into the laboratory and on through the summer at the rate of one generation a month.

By the first of the following year one million individuals were present in rearing cages in the field laboratory, and the following March the parasitized eggs were divided into 100 lots, each of which contained approximately 10,000 parasites, and were put out in colonies, while a large quantity of parasitized eggs remained and were placed in cold storage awaiting the appearance of fresh eggs of the gipsy-moth in the latter part of the summer. This hope was vain, however, and when the eggs were taken from cold storage not a single living specimen remained. By the end of 1910 hopes of the survival of the species in the field were almost abandoned; but, in spite of an apparent enormous decrease in their numbers at that time, the insect has finally accommodated itself to New England conditions and is breeding rapidly and spreading slowly from points where it succeeded in maintaining itself.

In the meantime, although the spread by natural means is slow, the minute adult flying but a short distance, it is being artificially spread and parasitized eggs are being taken into the laboratory, and as soon as the adults issue these are being taken to new localities in tubes (see pages 45 and 47). Each tube contains 1,600 adult Schedius; and two tubes, containing 3,200 adults in all, are used for each new colony. In the laboratory, trays, as shown on page 45, are used for the rearing, each tray being stocked with one million gipsy-moth eggs.

Still another egg parasite, known as *Anastatus bifasciatus,* which was sent over from Hungary by Prof. Joseph Jablonowski, also succeeded. One million five hundred thousand parasites of this species have been liberated during the past year. Eight hundred colonies were placed in towns along the western border of infestation, and the balance were liberated in a number of towns in the northern part of Massachusetts. During November, 1913, collections were made in New Hampshire from the colonies of this species that were planted a year before, and examination showed that they were practically all successful. In these collections 100,000 parasitized eggs were secured and will be used this season for colonization in New Hampshire.

LOSING THEIR EVIL POWERS

On the whole, then, the outlook is favorable. The work of the government and the different States has resulted in bringing about infinitely better conditions in New England, so far as these pests are concerned, during the past nine years; and while it is practically certain that both gipsy-moth and brown-tail moth will gradually spread to the westward, it is equally sure that the imported natural enemies will come with them and the wilt disease and the fungous disease of the brown-tail as well; and this, with the knowledge which we have gained as to the best handling of the pests, will prevent in all probability in any part of our country the disastrous results which we saw in Massachusetts in the years prior to 1905.

THE NEED OF CONSERVING THE BEAUTY AND FREEDOM OF NATURE IN MODERN LIFE

By Charles W. Eliot
President Emeritus of Harvard University

THE past hundred years have supplied civilized mankind with a complete demonstration that the evils which attend the growth of modern cities and the factory system are too great for the human body to endure; yet these evils are the consequences, or results, of nineteenth-century civilization, and particularly of that form of liberty which the first half of the century developed—individualism. Within the last 40 years a different form of liberty, the liberty of association and collective action, has begun to check some of the evils fostered by individualism, and so to improve the human environment.

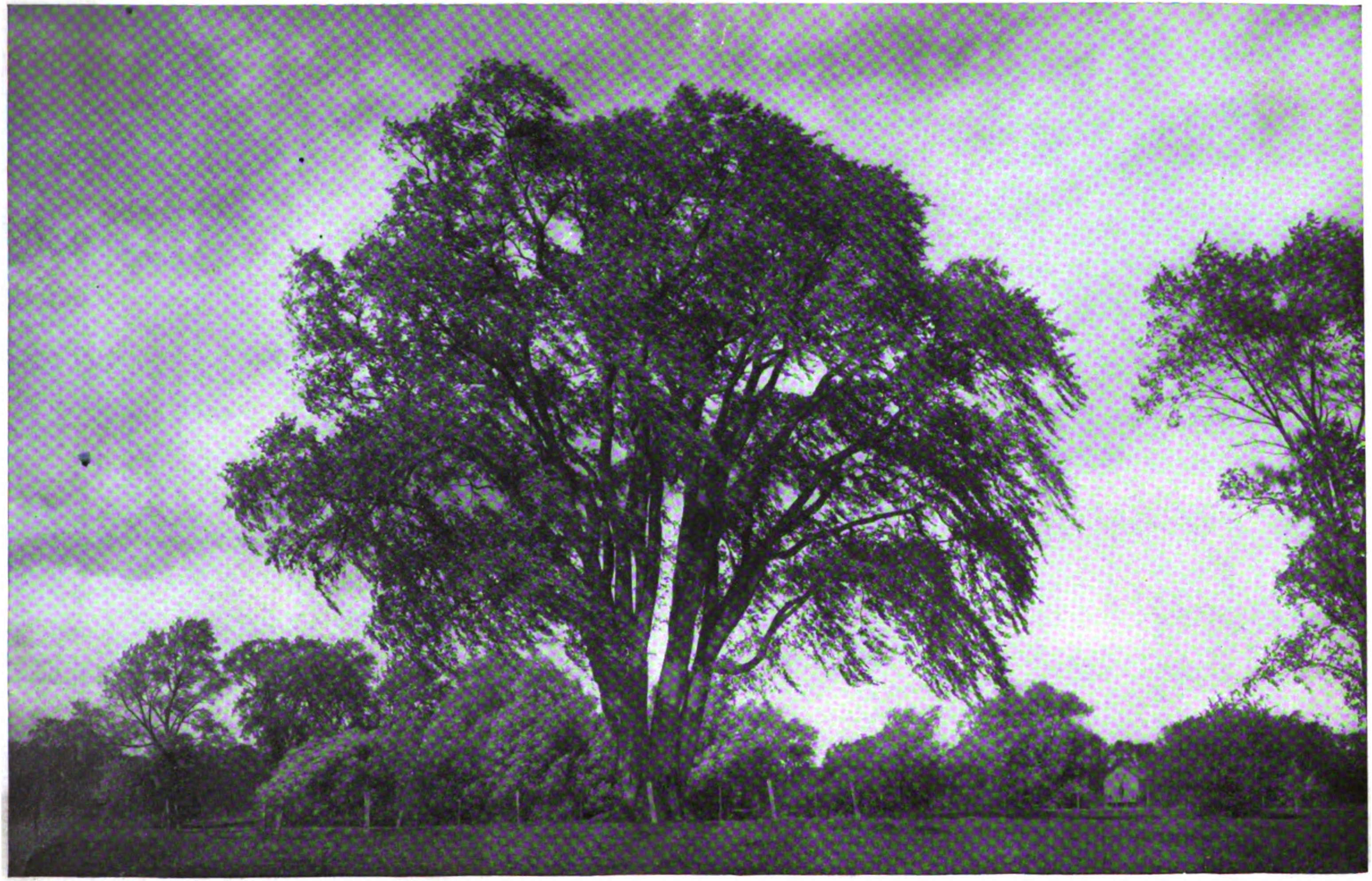
The sources of the evils which afflict the population massed in cities are partly physical and partly mental or moral. The collective energies of society are now actively directed to the amelioration of bad physical conditions, and considerable improvements in this respect have already been made; and more are in sight. The study, even, of remedies for wrong mental and moral conditions has hardly begun; yet these are the fundamental evils which must be eradicated, if improved physical conditions are to produce their desired effects.

It is therefore a very practical and urgent inquiry: What influences in the environment of civilized mankind make for mental health, for wholesome interests, for rational pleasures, and for exalting delight in the beauty, grace, and splendor of nature?

By far the most important social study today is the study of the means of improving men's emotion and thought environment from earliest youth to age. These means are both negative and positive—on the one hand they must shut out poisonous excitements and injurious pleasures, on the other they must develop all wholesome mental interests and enjoyable activities of observation, memory, and imagination.

IMPROVE OUR ENVIRONMENT POSITIVELY AS WELL AS NEGATIVELY

In order to cure the destructive evils of present urban life and the factory system, it will not be enough to restrict the vices, to diminish the pressure of poverty, to prevent destructive diseases, and prolong the average human life. The human environment must be not only negatively but positively improved; so that the whole people may have the opportunity to cultivate healthy tastes and interests, to acquire just ideals of pleasantness and beauty, and to learn the value toward tranquil happiness of that living with



A SPLENDID ELM OF CENTRAL MASSACHUSETTS

"The white elm is one of the largest and most graceful trees of the northeastern States. It is beautiful at all seasons of the year; when its minute flowers, harbingers of earliest spring, cover the branches; when in summer it rises like a great fountain of dark and brilliant green above its humbler companions of the forest or sweeps with long and graceful boughs the placid waters of some stream flowing through verdant meadows; when autumn delicately tints its leaves, and when winter brings out every detail of the great arching limbs and slender, pendulous branches standing out in clear relief against the sky."—Sargent's *Silva*.

nature which city congestion has within a single generation made almost impossible for multitudes.

While the exclusion of bad influences needs to be unremitting, the good influences — fortunately for crowded urban populations—need not all be incessantly in action. An occasional holiday in a city park or garden, a week-end in the country now and then, or a fortnight's vacation in summer may make deep and lasting mental impressions, and supply both children and adults with wholesome material to fill the mind and direct its energies for months and years.

Hence the importance of better city and suburban planning, of public reservations of all sorts in city and state, and of national parks and monuments. All these modes of public action tell not only on the physical well-being of both urban and rural populations, but on the mental training of children and on the cultivation in the whole population of thoroughly healthy spiritual interests and uplifting enjoyments, both individual and social.

The profession of landscape architecture is going to be—indeed, it already is—the most direct professional contributor to the improvement of the human environment in the twentieth century, because it is devoted not only to the improvement of housing and of town and city designing, but also to the creation, preservation, and enlargement of opportunities for human enjoyment of mountains and valleys, hills and plains, forests and flowers, ponds and watercourses, spring blossoms and autumn tints, and the wild life of birds and other animals in their natural haunts. These are the things that city dwellers need to have opportunities to see and enjoy; these are the things that serve as antidotes to the unwholesome excitements and tensions of modern city life; these are the delights which, by occupying the mind and satisfying the spirit, keep out degrading thoughts and foul desires.

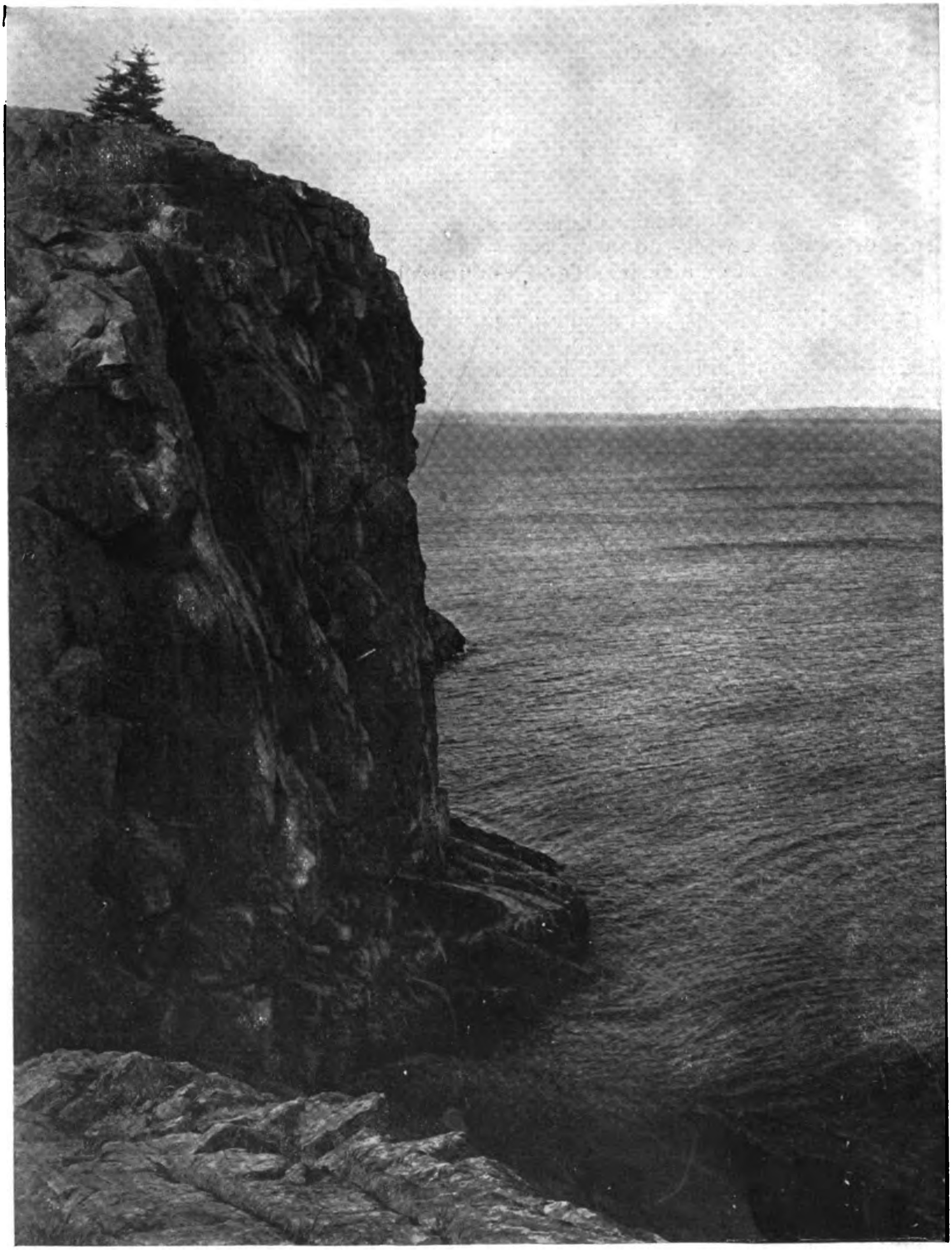
THE VITAL PROBLEM TODAY IS HOW TO FEED THE MENTAL HEALTH OF MULTITUDES

That good environment can modify favorably the effects of heredity is as true of nations as of individuals. The vital question of modern life is how to feed the mental health and spiritual growth of multitudes. In the modern world life is tightly packed against life, and one life is interwoven with many others. Neither freedom of mind nor health of body can be secured in isolation; for both blessings the individual must hereafter be dependent on social or collective action.

The present evils of city life and the factory system—bad conditions which civilization has itself created—have developed their destructive forces in this country in spite of the schools and churches and of free political institutions, and in spite of many happy influences from art, poetry, music, and the drama. Clearly, society needs to develop a new and better environment for the general life—an environment favorable to both bodily and mental health and to the attainment of genuine happiness—not of mere momentary excitements, pleasures, and gratifications, but of solid contentment, and the lasting satisfactions of life enjoyed in quietness and peace. What are the means of compassing this end?

The readiest means is good planning of city, town, and landscape—first applied to areas still open, and then gradually to areas already occupied in undesirable ways. The new planning must take into account the interests of the whole community, as well as the interests of individual owners, the social or collective interest always prevailing.

The immediate objects to be sought are more light and air for dwellings, offices, shops, and factories, and thus a spreading out of cities; the transfer of factories to suburbs and to country sites along the lines of railway; the multiplication of playgrounds and open decorated areas, and above all the attachment of a piece of arable or garden ground to every family dwelling. Many of these results can certainly be attained; and indeed much work of this sort is already started in regulating the height of buildings, transferring factories and setting up new plants in smaller towns, enlarging school yards, and creating public parks and gardens.



GREAT HEAD: THE BOLDEST AND THE HIGHEST HEADLAND ON THE AMERICAN COAST FROM THE ST. LAWRENCE TO THE AMAZON

In occasional great winter storms the sea breaks over the top in sheets of spray—a wonderful thing to see

BEAUTY BRINGS CHEERFULNESS AND SOCIAL HAPPINESS

The housing problem for mechanics and operatives has already been solved in a business way by the English Garden City. In cities already too compactly built and with too lofty structures the improvement of the human environment must await better understanding of life's needs or change of taste in populations now unwholesomely congested. With the diffusion of knowledge concerning healthy and happy conditions for family life and the industrial life of the laborious masses this reformation of our cities and manufacturing towns will surely come about, but in coming about it must take account of something more than water supplies, sewers, and street lights; it must take account of beauty and of all that brings cheerfulness and social happiness.

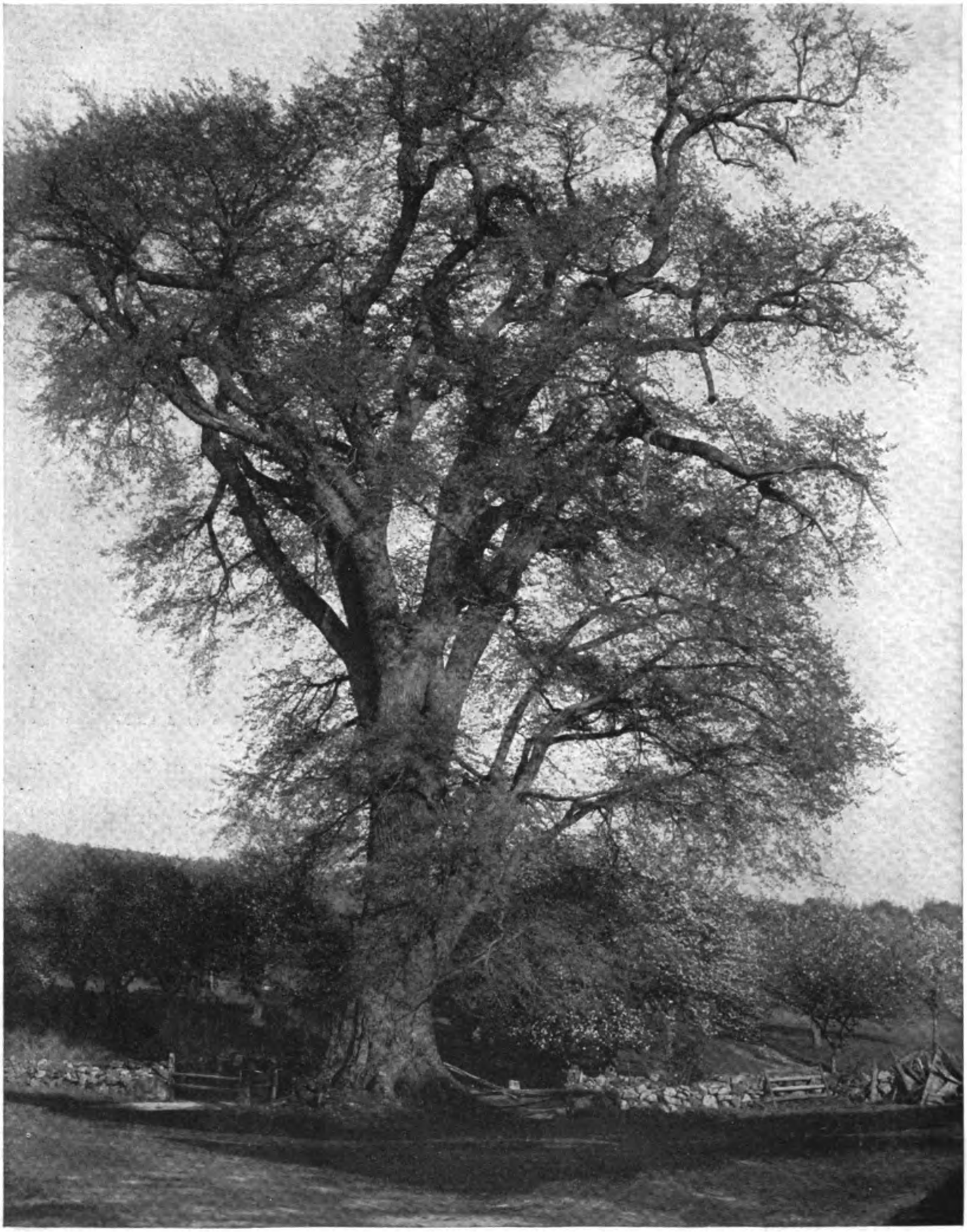
The collective force of the community must further supply the means of making rural and landscape pleasures occasionally accessible to city populations by means of parks and gardens which illustrate all forms of open-country beauty and permit the occasional enjoyment by city families or larger urban groups of the outdoor pleasures which woods, shrubberies, gardens, and broad fields can give. All city dwellers greatly need these occasional delights, and Americans more than any other people; for they have become accustomed to an indoor life, and have come to rely on electricity as a substitute for sunlight, and mechanical ventilation as an equivalent for fresh air. Even the richer sort of Americans are often content to live in houses in which at least one-third of the cubical contents cannot be used without artificial light the year round, and to occupy offices in which electricity has to reinforce sunlight during the greater part of the year.

The proper use of the natural materials for creating on public ground fine landscapes, gardens, and scenes of rural beauty involves an extensive study of these materials. The landscape architect must know how to use a near or distant prospect of hills and woods. He must know the trees, shrubs, and herbaceous plants valuable in landscape or in gardens, or along walks and drives where thousands of people daily pass. He must know all the native materials for creating scenes of beauty, and all the imported materials which have proved available in the climate of the reservation he plans. And in order that the landscape architect may have the opportunity to study these materials, society must furnish places where they may be assembled, appropriately used, and thoroughly tested.

ENCOURAGE PUBLIC INTEREST IN ANIMAL AND VEGETABLE LIFE

In other words, the collective force of society should be used to provide and maintain living collections of these materials of landscape and garden beauty, where climate, soil, and scenery make it possible to assemble, cultivate, and exhibit them advantageously. The botanic gardens and arboretums which universities and governments maintain do not fully answer this purpose, although they contribute to it; because the lay-out of the botanical gardens and arboretums is made for a scientific purpose quite different from that which directs the thoughts of the landscape architect.

There is another source of keen enjoyment for city people which should be provided for when parks, gardens, and playgrounds are constructed for their pleasure, namely, the natural interest in animal life as well as vegetable life. Most men and nearly all women take a keen interest in bird life—in the migration, nesting, family life, and feeding habits of birds, both land birds and sea fowl. It is one of the advantages of suburban over city life that many varieties of birds can be seen and studied in the suburbs. The collective force of society, therefore, should be exerted to preserve all the species of birds which are profitable, not only for food and crop protection, but also for the stirring of human sympathy and delight in their colors, songs, and alert, sprightly ways. The provision of sanctuaries for birds, of closed spaces as well as closed seasons, is a highly expedient use of the collective protective force of society against individual destroyers of bird life.



A TYPE OF ELM FOR WHICH NEW ENGLAND IS FAMOUS

This tree is doubtless several hundred years old and has many scores of years of natural life left, as the elm reaches a maximum age of about 500 years, grows to a height of about 120 feet, and attains a maximum diameter of about 11 feet. No other tree in the United States has been so extensively planted for ornament and shade.

The government of the United States has begun to use effectively its constitutional powers for improving the environment of the people by conserving broad scenes of extraordinary natural beauty and single beautiful or striking objects which, without the protection afforded them by government, might be lost to future generations. The national parks are reserved by act of Congress; the President, by executive order, may and does order the preservation of smaller areas or single objects under the title of national monuments. State legislatures have begun to provide State reservations, and have authorized municipalities, or special districts, to acquire both large and small parks. Chartered bodies of trustees have been authorized by State legislatures to acquire and hold considerable areas for perpetual public use.

THE PLAN FOR A NATIONAL MONUMENT AT MOUNT DESERT

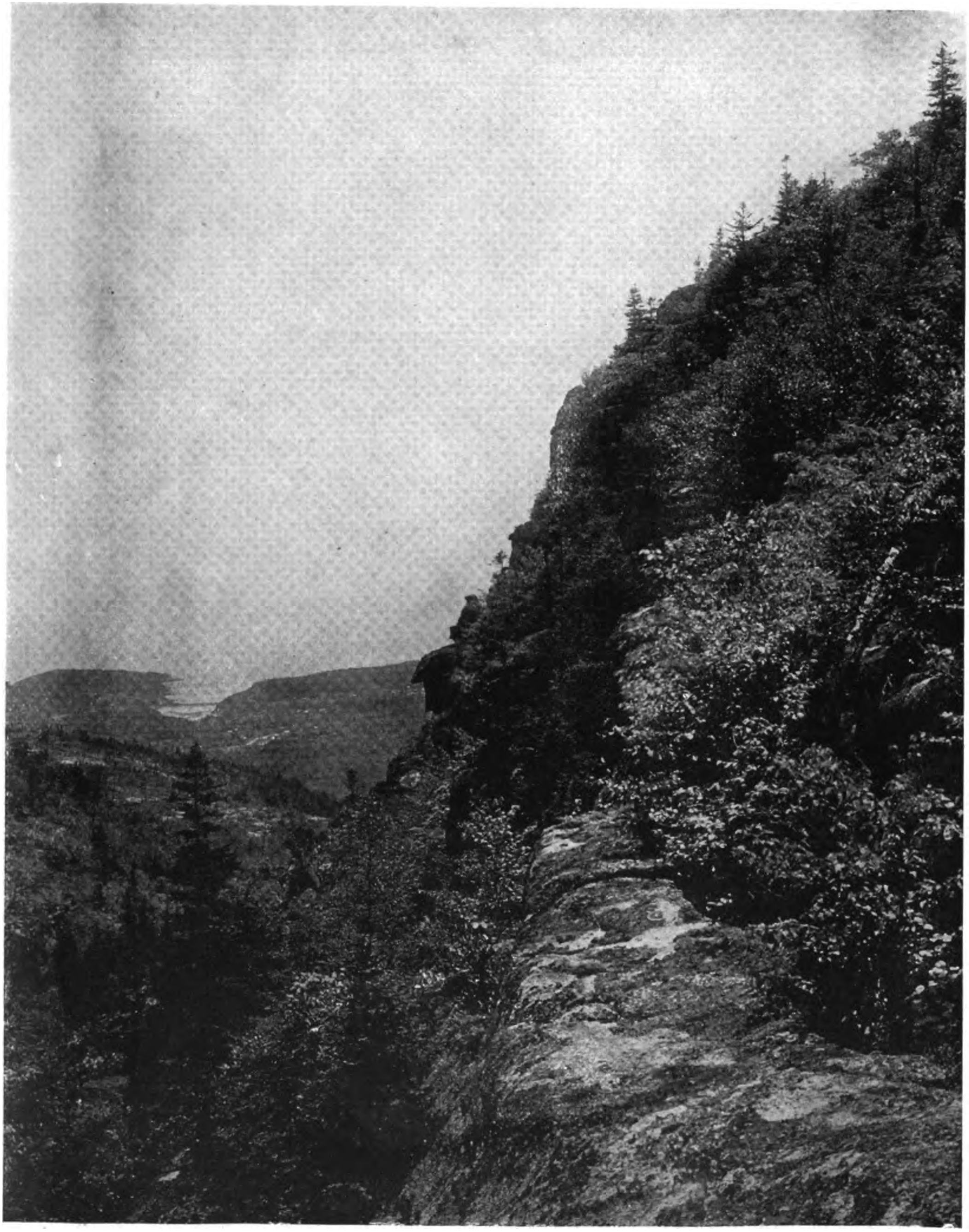
On the beautiful island of Mount Desert, not far from the northeastern extremity of the Atlantic coast of the United States, there is at this moment opportunity for establishing a national monument of unique interest and large serviceableness. The island is the loftiest piece of land on the Atlantic coast of the United States, and has a sharply differentiated surface of hills and valleys, a climate midway between that of the neighboring lands and that of the surrounding sea, abundant water, and in favorable spots a highly productive soil, well suited for growing a wide variety of trees, flowering shrubs, and herbaceous plants belonging to the temperate and subarctic regions of the world.

Private initiative and enterprise have long since demonstrated the peculiar fitness of the Mount Desert climate and soils for horticultural and arboricultural uses, and leading botanists and garden experts have testified to the remarkable thriftiness of plants grown upon the island, as well as to the unusual beauty and rich coloring of their blooms.

A body of trustees, called the "Hancock County Trustees of Public Reservations," has already acquired the wooded slopes and rocky summits of many of the principal hills, and holds them for perpetual public enjoyment. Possession, too, has been secured by public-spirited private persons of considerable areas exceptionally fitted for the growth and exhibition of all varieties of trees, shrubs, and herbaceous plants which the landscape architect might use in developing all across the continent, in northern climates, parks and gardens for the enjoyment of city populations. Here, too, all the bird-food plants could be appropriately cultivated and bird sanctuaries provided. The cultivated tracts would have a noble background of rocky cliffs and lofty hills, and down the valleys and gorges visitors would look out from time to time over the near bays or the distant ocean. Here, in short, could be brought together under highly favorable conditions and in great variety the botanical and zoölogical materials of the landscape and garden designer.

If the government of the United States should set aside as a national monument a large area on this picturesque and unique island, it would help to consecrate for all time to the improvement of the human environment one of the most beautiful and interesting regions in the whole country; and in so doing it would take appropriate part in resisting and overcoming the destructive influences on modern civilization of urban life and the factory system.

The powers of the national government have thus far been exerted to these conservation ends chiefly in the Far West, where population is sparse and the evils of city life and the factory system are little developed. Is it not just and highly expedient that these beneficent powers should now be exerted in the East, where manufacturing industries occupy the major part of the population and the destructive effects of city life have long been manifest?



VIEW FROM THE GREEN MOUNTAIN TRAIL

One looks seaward over a vast ocean plain stretching forty-odd miles away to the horizon. The inlet on the shore is Otter Creek, a little harbor inclosed by bold, surf-beaten headlands, and one of the most picturesque spots upon the coast. On the right the county road continues on along the coast to Somes Sound, the fiord which another picture shows, and beside whose entrance the Jesuit settlement of 1613 was made.

THE UNIQUE ISLAND OF MOUNT DESERT

BY GEORGE B. DORR, ERNEST HOWE FORBUSH, AND M. L. FERNALD

MOUNT Desert Island, a unique and striking landmark from the sea, was the first land to be approached, described, and named—with the name which it still bears—in the earliest recorded voyage of exploration made along the coast of Maine to the eastward of the Kennebec.

In the early days of September, 1604, when the poplar trees and birches of the northern forest were first commencing to turn to gold amid its then abundant pines and dark-green spruces, Champlain sailed from the eastward down that wild and unknown coast until the bold range of the Mount Desert hills, with their bare rock peaks and deep dividing valleys, ice-eroded, rose before him. Turning then, he sailed up into the noble bay that bounds the island on the east and which still bears the name of Frenchmans Bay, and—nearly wrecking on the way, in gathering dusk no doubt, his big, lateen-sailed, open boat upon a rock that was awash—anchored for the night.

The next day, after having explored the upper bay to the Narrows, where a bridge connects the island with the mainland now, he sailed on around the deep, sheer headlands of primeval rock—unequaled on our coast—that oppose their surf-formed precipices to the open sea, and came into island-sheltered waters on the southern side, where he made friends with Indians, who presently guided him up the Penobscot River, the eastern extremity of whose mouth he describes the Isle des Monts Deserts as forming.

The lesser islands, islets, and sea-girt rocks he passed upon the way were so numerous, he tells us, that it was "marvelous to behold"; and among them some were very beautiful and contained fair meadows, while the oaks upon one side of the river bank as he ascends appear as though "planted for ornament"; on the other the pine forest grew.

THE "MAYFLOWER" OF THE FRENCH

Nine years later the French returned to Mount Desert, thither led by God, the Jesuit narrator says, across a dangerous and fog-hidden sea, to form for a brief while the only colony from oversea ever established by the French upon this country's northern coast in their long contest with the English for America.

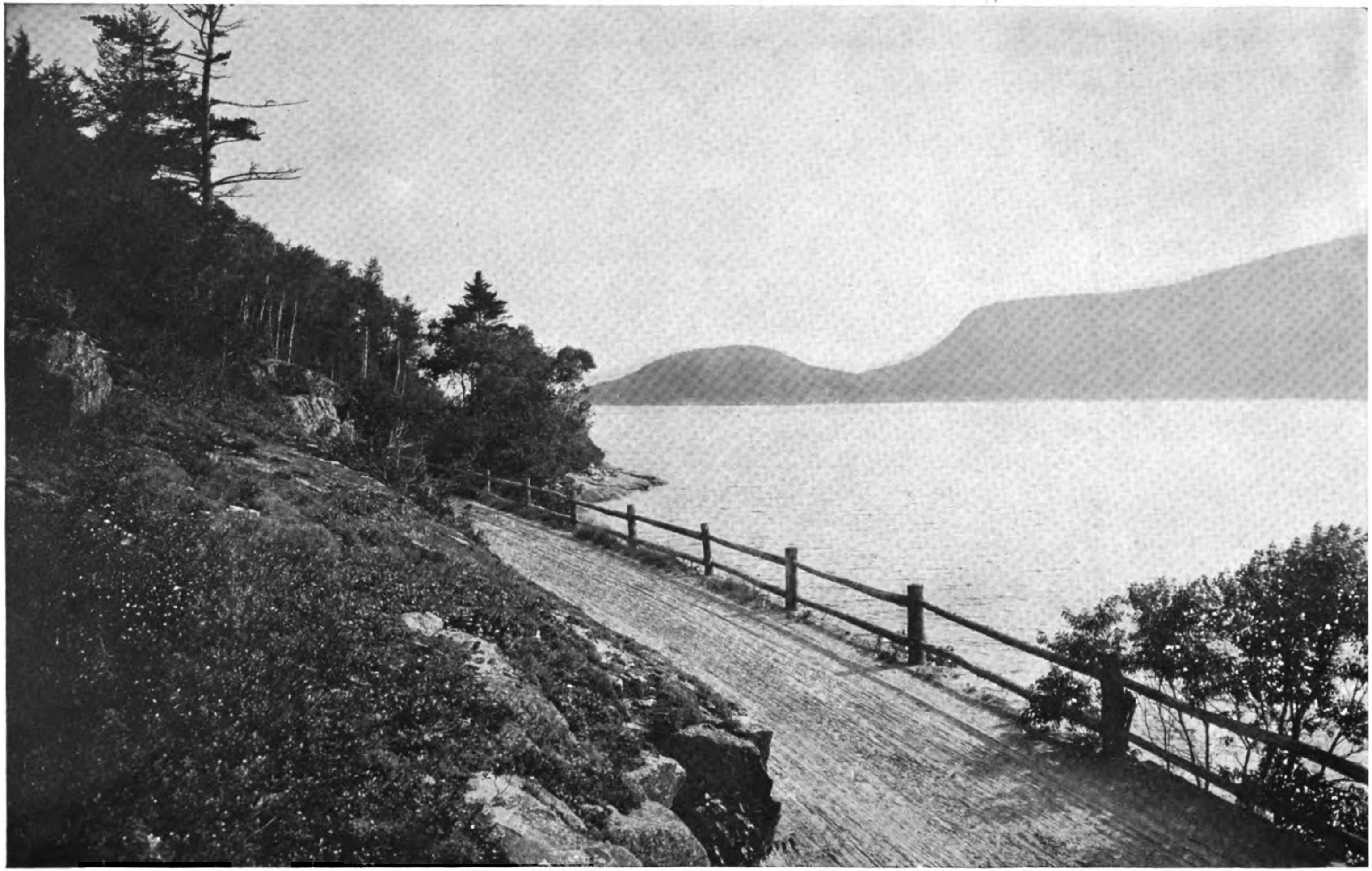
In a small vessel of a hundred tons, which Parkman calls the *Mayflower* of the French, laden with goats and horses, seed-grain, stores, and agricultural implements, the colonists set sail from Honfleur, on the coast of France, in the first days of spring, 1613. It was late in May when they came to rest beneath the deeply shadowed cliffs and wooded hills of Mount Desert and lay in safety in a pleasant harbor on its eastern shore.

Landing there, they raised the cross, held mass, and named the place, in thankfulness for the guidance given them to so fair a spot, Saint Sauveur. Later, however, persuaded by Indians encamped beside the shore where North East Harbor is today, they sailed around to the mountain-guarded entrance to Somes Sound—the one true fiord upon our coast—and there established their little colony upon a pleasant hillside sloping gently to the sea and bathed on either side with springs; upon the earth, "black, rich, and fertile," the grass grew "tall in places as a man." This place looked out to the southeast upon a sheltered harbor "where a fleet might ride in safety," but into whose peaceful waters an English foe came sailing one fair morning later on and wrecked the colony.

"Thus," Parkman says, "in a semi-piratical descent, an obscure stroke of lawless violence done at Mount Desert began the strife of France and England, of Protestantism and Rome, which for a century and a half shook the struggling communities of North America, and closed at last in the memorable triumph of the English on the Plains of Abraham.

THE COMING OF JOHN WINTHROP

Twenty-one years later still—upon the 8th of June, 1630—John Winthrop, bringing the charter to the Massachusetts



SOMES SOUND: THE ONE TRUE FIORD ON THE ATLANTIC COAST OF NORTH AMERICA, FROM NEWFOUNDLAND SOUTHWARD

The mountains inclose it precipitously on either side as it passes through the granite range, while the depression which forms it nearly cuts the island into two beyond. It forms a magnificent natural harbor, deep enough to float the largest transatlantic steamers colony at Salem and its appointed governor, sailed by between the island—whose lofty heights he makes the western "Cape," or boundary, of the Bay of Fundy—and Mount Desert Rock, finding there "fair sunshine weather and so pleasant a sweet air as did much refresh us; and there came a smell from off the shore like the smell of a garden."

That day there came a wild pigeon, too, and rested on his ship—a species now extinct through wanton slaughter—and he tells how they put the ship a-stays in 30 fathoms of water, and took "in two hours, with a few hooks, sixty-seven codfish"—and very great fish they were, some of them a yard and a half long and a yard in compass; and how a whale lay in their way and "would not shun them," so that they sailed by within a stone's throw of him as he lay spouting water, with his back hunched up a yard above the sea.

A GIFT TO THE NATION

Three centuries—a few years more or less—after Champlain sailed beneath the granite range of the Mount Desert mountains and the French colonists had broken ground upon the fertile shore, a group of summer residents, who had long found pleasure in the various beauty of the island and a restful home upon its shores, gathered in response to a call from Dr. Charles W. Eliot, then president of Harvard University, to associate themselves together for the purpose of conserving the wild, inspiring beauty—supreme in its own way—the many-sided interest and open freedom of the nature which had meant so much to them.

Gradually the undertaking thus begun has grown, till now the association holds between five and six thousand acres on the island in one continuous reservation, which includes the highest mountain peaks and the greater part of the watershed of the high-lying lakes between them whence the water supplies of the residential portions of the island are chiefly drawn. The area also includes much forest land, with deep valleys which offer admirable shelter for wild life, open marshes and pools suitable for wading and aquatic birds, streams on which beaver formerly built their dams and which would make fit homes for them again, and the best opportunity along the whole Maine coast for preserving and exhibiting in a single tract its native flora.

This ownership the association hopes ultimately to extend, as opportunity to do so at reasonable cost shall offer, till it includes the whole range of bold, ice-worn granite hills, from 12 to 15 miles in length, which extends across the island, offering magnificent views of sea and land, together with the cool lakes, the wooded valleys, and the one noble fiord on our Atlantic coast which lie between them.

The completion of this purpose will create a wild park of remarkable beauty, unique character, and great variety of landscape feature, whose permanent and best development in accordance with the spirit of their undertaking the members of the association feel will be provided for most wisely by placing it—except in special portions carefully selected and set aside for arboretum and other educational or scientific purpose—in the hands of the Federal government as a gift to the nation.

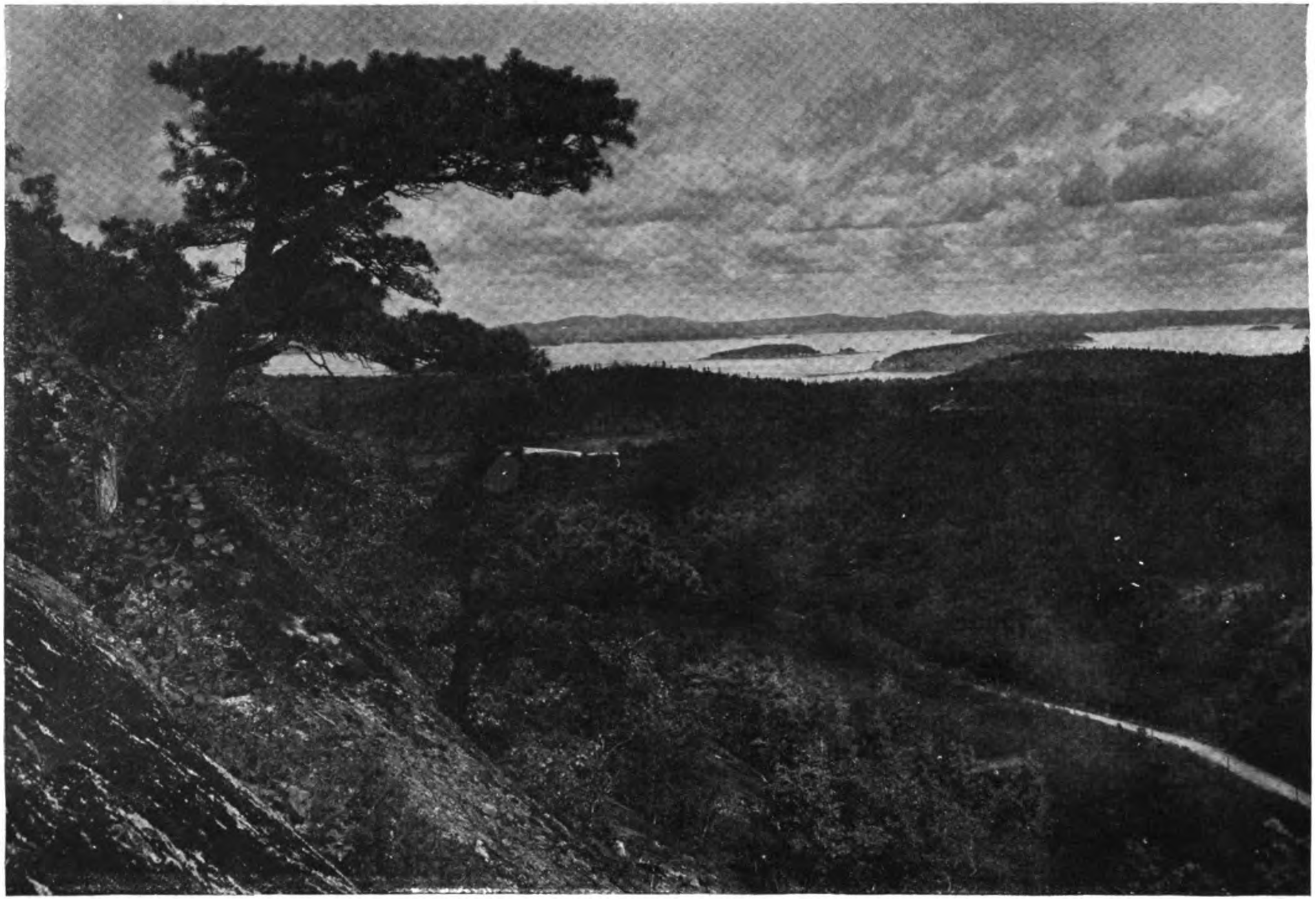
Saved to future generations as it has been to us, in the wild primeval beauty of the nature it exhibits, of ancient rocks and still more ancient sea, with infinite detail of life and landscape interest between, the spirit and mind of man will surely find in it in the years and centuries to come an inspiration and a means of growth as essential to them ever and anon as are fresh air and sunshine to the body.

MYRIADS OF LAND AND WATER BIRDS *

When America was first discovered the coast of Maine was the habitat of myriads of land and water birds. Champlain, in his account of his second voyage along that coast, tells of the multitude of fowls of the air which he beheld. Hakluyt, in his "Discovery of Norumbega,"

---

* The preceding paragraphs are by George B. Dorr; the succeeding paragraphs, until the heading "Mount Desert contains a greater diversity of plant life, etc.," by Ernest Howe Forbush, and the concluding paragraphs, beginning with the above heading, are by M. L. Fernald, Curator Gray Herbarium, Harvard University.



A SPLENDID VISTA

Upper Frenchmans Bay lies in the distance, the Gouldsboro Hills beyond. Below lies the gorge—a deep, precipitously rock-walled passage, ice-eroded, through the granite chain—which makes the natural highway between the Bar Harbor region and the southern shore mentions particularly "the great plentie of foules." Rozier, in his narrative of Weymouth's voyage to the Maine coast in 1605, speaks of "many fowls of divers kinds" as breeding upon the islands. He mentions particularly eagles, hernshaws (herons), cranes, ducks, great geese, swans and penguins (great auks), crows, shrikes, ravens, mews, turtle doves (passenger pigeons), and "many other fowls in flocks unknown," and speaks of cranes especially as breeding on these islands. Levett again, in his "Voyage to New England," 1623, speaks of "a world of fowl" along the coast.

This coastal region is indeed wonderfully fitted to be a great nesting ground and feeding place for both land and water birds.

The coast-line is so broken with deep, irregular indentations and the islands lying off it are so numerous that from Casco Bay to the Canadian boundary it presents to the wash of the tides more than 2,500 miles of shore. All along the coast there are broad flats and salt-marshes extending deeply inland which are swept over twice a day by the tide's great flood, rising from 12 to 13 feet in the Mt. Desert region; and every recurring tide for ages past has brought and deposited upon these flats and marshes quantities of floating marine life, while countless animal and vegetable forms grow upon and in their fertile bottoms.

In the early days, when every tide went out, great multitudes of birds of many species found a bounteous repast spread for them along that vast stretch of coast. Yet, although food conditions for them are almost as favorable today as they were when Champlain first explored these shores, only a pitiable remnant of the birds remains.

MANY HAVE UTTERLY DISAPPEARED, BUT MANY MAY STILL BE PRESERVED BY PROMPT MEASURES

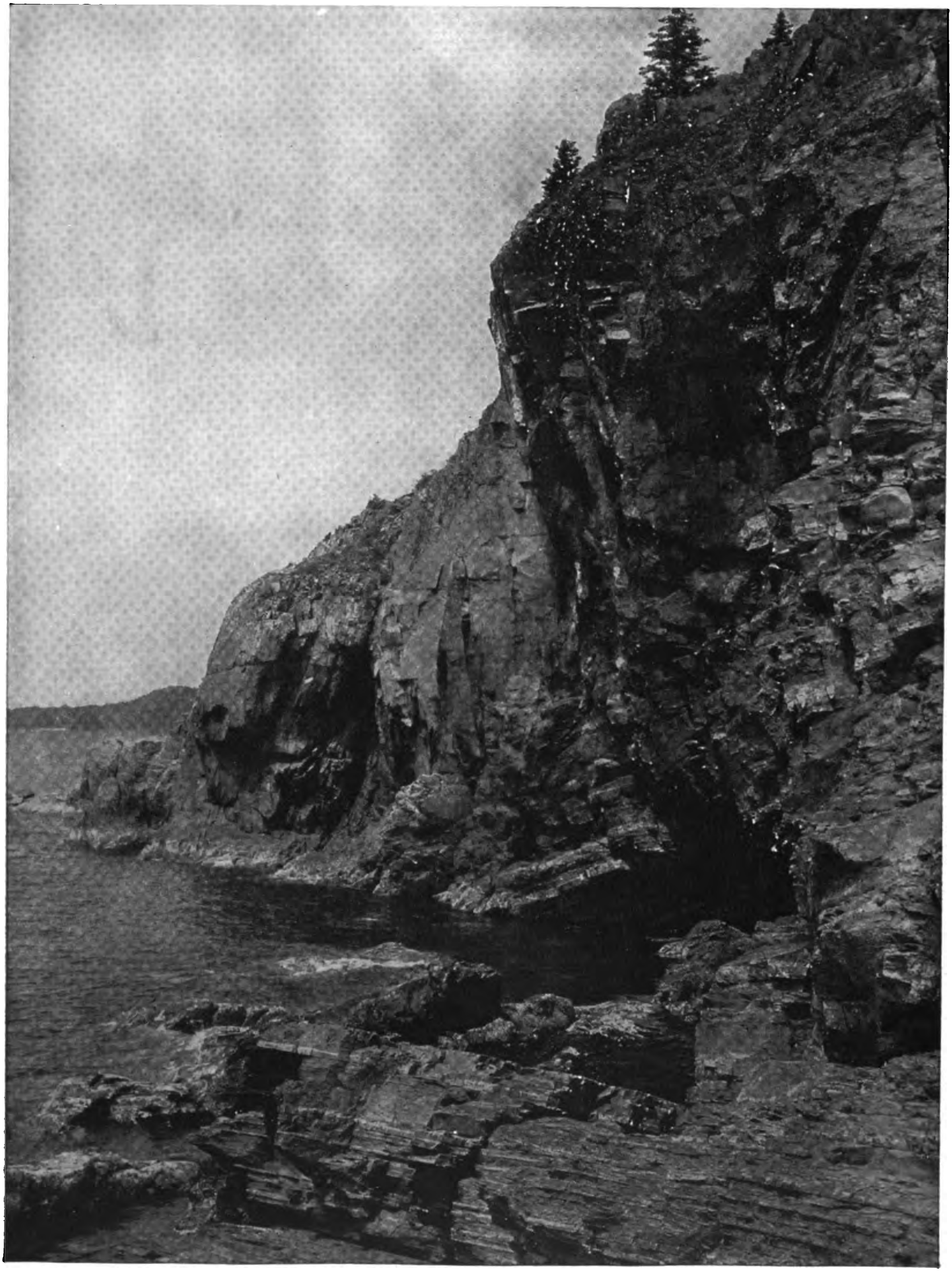
The continual hunting and shooting of birds throughout the Atlantic States and the maritime provinces, with the destruction of their nests, eggs, and young for food and commercial purposes, has swept the coast like a destructive storm, annihilating far the greater part of the bird life that formerly existed there. The multitude of swans, snow geese, great auks, wild turkeys, and wild pigeons that were seen by the earlier explorers are gone, and with them are also gone the Labrador ducks, cranes, spruce partridges, ravens, and eskimo curlew, while many other shore birds and water fowl have become rare almost to disappearance, although prompt measures still would bring them back.

The Maine coast is not alone in this, for recent explorers tell us that northward along the unprotected coasts of Nova Scotia, Newfoundland, and Labrador the nesting wild fowl and shore birds are disappearing so fast that now the eastern coast of Maine, where occasional island colonies of these birds have been given some protection by the National Association of Audubon Societies, offers the best opportunity existing for saving from destruction the typical water birds which once bred so abundantly along the whole northeastern coast of North America.

It now seems as though the tide were turning and that the destructive evils of the past may at last be stayed. The recent action of Congress in enacting a national law for the protection of migratory birds gives encouragement to the hope that it may yet be possible to foster and gradually bring back to some measure of the old abundance and variety the valuable—and, once lost, irreplaceable—wild bird-life of this continent. But the enactment of laws alone will not secure results.

All who speak with knowledge now agree that no plan for the preservation of birds in any country can succeed unless adequate and well-placed bird refuges and absolute sanctuaries are provided, where all shooting or disturbance of the birds is prohibited, where the birds that breed locally can nest in safety, and where migratory birds of the farther north can find shelter, protection, and food in their migrations. Every year's delay counts heavily against the birds.

Over 900 million shot-gun cartridges are sold in the United States each year and more than 100 million in Canada. Great numbers of muzzle-loading guns



THE SEA-GULLS' HOME

A seaward-facing cliff of immeasurably ancient Cambrian stone, formed of clays and sands washed down from a vanished continent older probably than life of any sort on land. These were deeply buried subsequently and turned by pressure into hardest rock, but the sea-laid strata still show clearly in the foreground.

also are used by foreigners, Indians, and people on the border-line of civilization, of whose loose ammunition no record of amount can be obtained, and great quantities of birds are slain by immigrants with cane-guns, snares, nets, bird-lime, etc. The forces of destruction are constantly increasing and the need of sanctuaries where no shooting will ever be allowed has grown urgent to the last degree.

THE PATHS OF THE GREAT BIRD MIGRATIONS CONVERGE AT MOUNT DESERT

The shape and geographical position of the continent of North America is such that during the migration seasons bird-life goes crowding up or down this country's coasts, both Atlantic and Pacific. This is due to the much greater width and vast extent of the continent to the north of us and to the great feeding ground and natural line of travel offered by the shore to both land and water birds upon their flight.

On the Atlantic coast from the Bay of Fundy southward this effect of concentration is particularly great and must in early days, when birds were plentiful, have made it, during the migration seasons, a marvelous sight.

A third great highway of migration flight lies along the Mississippi Valley, and along all three of these great natural routes it is necessary that bird reservations should be established. But extensive tracts have been already set aside for this purpose by the government along the Pacific coast, and reservations on a vast scale are now in process of establishment, through private gift, along the Louisiana coast to the westward of the Mississippi mouth.

It remains for us in the east, where the bird life was once so abundant and the need came earliest, to do like work; and nowhere is there work of more importance to be done, nowhere is the need of the present day so critical.

The tendency of most migratory birds nesting on the eastern third of the continent is to fly southeastward from their nesting grounds until they reach the coast and then to follow it on southward, guided apparently by prominent landmarks spread along the coast, or to strike out presently across the sea to the Antilles.

When the autumn frosts come, migratory birds from Greenland, from all the shores of Baffins Bay, from Labrador and Newfoundland, from the cultivated lands of eastern Canada and all the wild interior beyond, pour their diminished legions down toward the Maine coast; in the springtime they return and spread out northward from it.

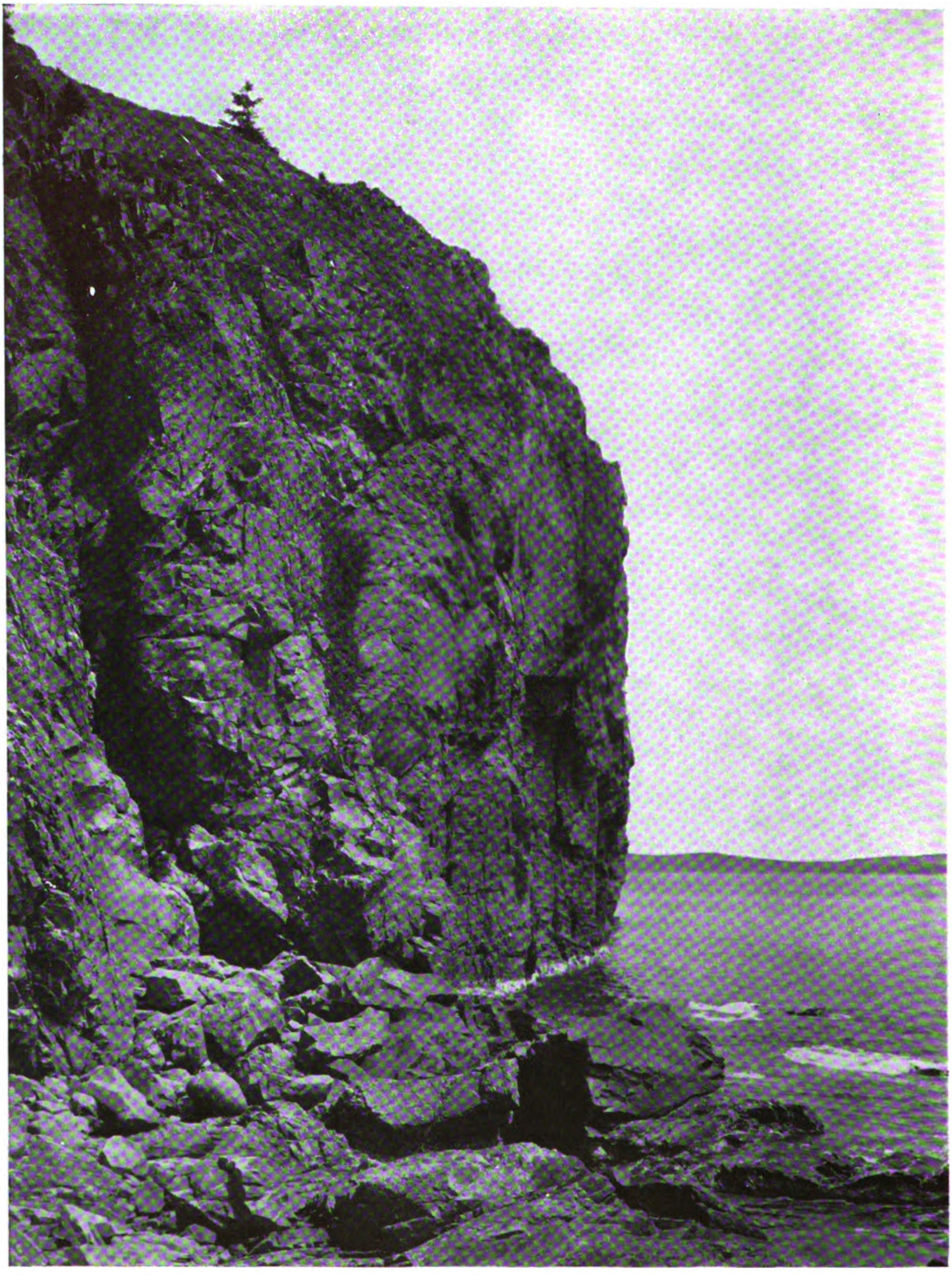
Thus Mount Desert Island, unique in being the only mountainous tract thrust prominently out into the sea, offers an important landmark and admirable resting place for migratory birds of every kind—birds of sea and shore, the useful insect-eating birds of cultivated lands, of woods and gardens, the birds of marsh and meadow lands and inland waters.

THE BIRDS OF AT LEAST FOUR FAUNAL ZONES NOW BREED AT MOUNT DESERT

The fauna and flora of the coast-line at this point are largely of the Canadian type and its birds are represented here with corresponding fulness. Nevertheless, a number of Hudsonian plants grow upon the island also and form breeding places for certain birds characteristic of that northern area. This is one of the very few points on the Atlantic coast of the United States where portions of this far northern flora and fauna can be found at all, and it is the southernmost of them all.

Following the coast up from the west and south, a number of the birds of the Alleghenian and transition zones reach the island also, and we thus find at least four faunal areas represented in summer at this unique spot, while a number of Arctic and other northern birds frequent the region in winter, at which season the Alaskan eagle and the snowy owl appear.

Remarkable opportunities exist here, accordingly, for inducing birds of many kinds to remain and nest upon the island, where they can be fostered, studied, and protected. For the birds of farm and garden it offers conditions that might readily be made ideal in certain sections. The growing forest cover provides admirable nesting places for all woodland



THE OCEAN FRONT UPON ROUND PORCUPINE

An island guarding the entrance to Upper Frenchmans Bay. This island is the hard rock-core of a hill that once rose above the stream-worn valley of the present bay; for the coast of Maine is what geographers call a drowned one—an old land-surface sunk beneath the level of the flooding sea—and it is this which gives it its bold character and remarkable extent, the greatest in the country next to Florida.

birds. For the birds of inland and of tidal waters the place is singularly favorable, while the vertical cliffs may yet call back to nest the raven and the eagle.

No northern situation was ever better fitted to grow a great variety of fruiting plants for bird food. The remarkable horticultural qualities of the island have long been recognized, and both wild and cultivated shrubs fruit there with an extraordinary profusion. In the deep valley, especially, which extends from the Bar Harbor region, and the great wooded heath to the south of it, through the wild mountain gorge with tarn-like bottom marsh and open pools that makes a natural highway for the birds between the northern and southern shores, there are wonderful sites for bird shelter-woods and bird-gardens.

In the fertile soil washed down into this valley from the granite heights above, open spaces may be planted with the native food-providing shrubs and trees, such as the alternate-leaved cornel, the wild pear that is so beautiful in its springtime flowering, the red-berried ilexes and richly fruiting thorns that bring such glowing color into the northern fall, interspersed with thick bushes suited for bird-nesting.

Here, too, there are excellent opportunities for growing along the banks of streams and ponds, near either entrance to this gorge, the seed-bearing herbaceous plants on which the marsh and water birds subsist, and an admirable chance for creating islands upon flooded marshlands which will form ideal breeding places for both land and water birds. Water in every form is here abundant—in springs and streams and open pools—while the deep, rich soil of the swamp and swale already produces plants in plenty to entice the birds that haunt such places, and little more is needed than to give these plants a chance to make their best development.

All through this valley and the adjoining one to the eastward, with its old beaver-pool beneath the wooded side of Newport Mountain, admirable opportunities may be found for such sheltered feeding places. Many more of the insect-eating song and other birds of New England farms and gardens which winter in the south might readily be led to make their summer home upon the island, while the great variety of northern winter birds which migrate through this region would make it possible, at little cost, to feed and assemble here large numbers of them also in many species.

A BIRD STUDY STATION IS NEEDED

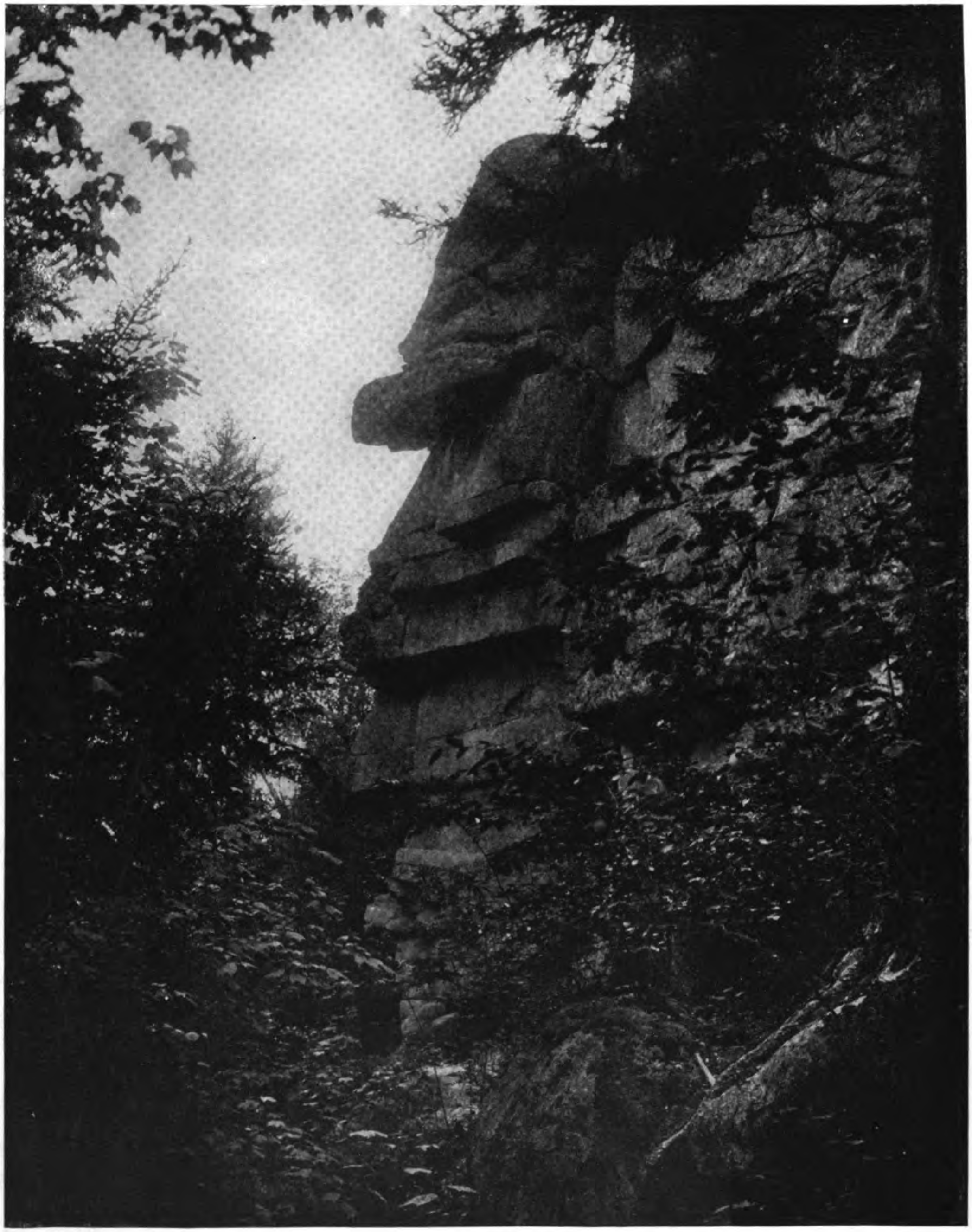
And here, of all places, an admirable opportunity presents itself for the establishment of a bird study station, combined with bird protection, such as has proved so valuable in Germany and has revolutionized the methods formerly in use there for the encouragement and protection of bird life.

At such a station the best methods of bird protection, food supply, and propagation would be studied out and given practical trial, and from such a station the results obtained would be published widely for the benefit of the country, while the interest and practical importance of the work done would, when once the undertaking was established, bring people in number to the island in summer time to study the methods practiced, or the birds themselves attracted to the spot.

Work along this line is greatly needed in America, to whose bird life the results obtained in Germany have proved, on experiment, to be only partly applicable; and carried out at Mount Desert, where and to the adjoining coast and islands so strong a tide of summer travel sets each year, and where so many people of influence and education, drawn from the country over, spend their summers, such work would have exceptional value, apart from the place's natural opportunity.

Nor would the presence of people in the reservation tend to drive out the birds, provided they were not molested, but help rather in extending the interest in bird life and knowledge of the birds. Some of the wilder birds are even now learning to live in cities where they are protected, and many birds might easily be attracted to a region so favorable for their shelter, sustenance, and nesting as this.

Mount Desert Island lies in the midst of a great chain of lesser isles spread



ON THE CADILLAC TRAIL ABOVE THE OCEAN DRIVE

An ancient sea-cliff cut by the beating surf of thousands, and probably tens of thousands, years ago, though now raised high above the ocean level by coastal uplift. The path along its base, named for the Sieur de Cadillac, one of the early French pioneers, is one of extraordinary picturesqueness.

broadly out along the coast on either side for 50 miles, and its dominating height and greater size make it doubly central. The establishment of the bird reservation now proposed upon this great coast landmark of the North Atlantic will mean not one important sanctuary only, but ultimately a far-reaching chain of island refuges along that coast — protected at little cost by local fishermen—where land as well as water birds may breed in safety.

Some of these islands already support considerable nesting colonies of terns in several species, of gulls, guillemots, petrels—"little Peters" walking on the water—herons, ospreys, with a few colonies of eider ducks and puffins. A few of these colonies, on islands lying to the seaward of Mount Desert, are now guarded by the Associated Audubon Societies, but speedy protection only can preserve the others from extinction.

The Mount Desert reservation, with its associated island sanctuaries, could not long remain an isolated work of bird protection on this great eastern highway of migration, but would form the first of a series of permanent bird refuges along the Atlantic coast of the United States which must eventually be established from Maine to Florida if the people of this country are to preserve what yet remains of the original bird fauna.

That some place in that region should be taken without delay for such a reservation cannot be questioned; and by accepting the important opportunity now offered on this island the Federal government would obtain immediately the best place possible for initiating a work long urgent on the Atlantic coast, and by whose neglect species of great economic value or exceptional beauty, like the passenger pigeon and the trumpeter swan, have been — hopelessly in the one case cited or practically in the other — but lately lost.

MOUNT DESERT CONTAINS A GREATER DIVERSITY OF PLANT LIFE THAN ANY SIMILAR RESTRICTED AREA IN NEW ENGLAND OR IN THE EASTERN STATES.

One of the commonest sights in the wilder districts of the northeastern United States is vast stretches of burned and waste lands, left in this sad condition after the cutting of timber and intentional or accidental burning of the refuse.

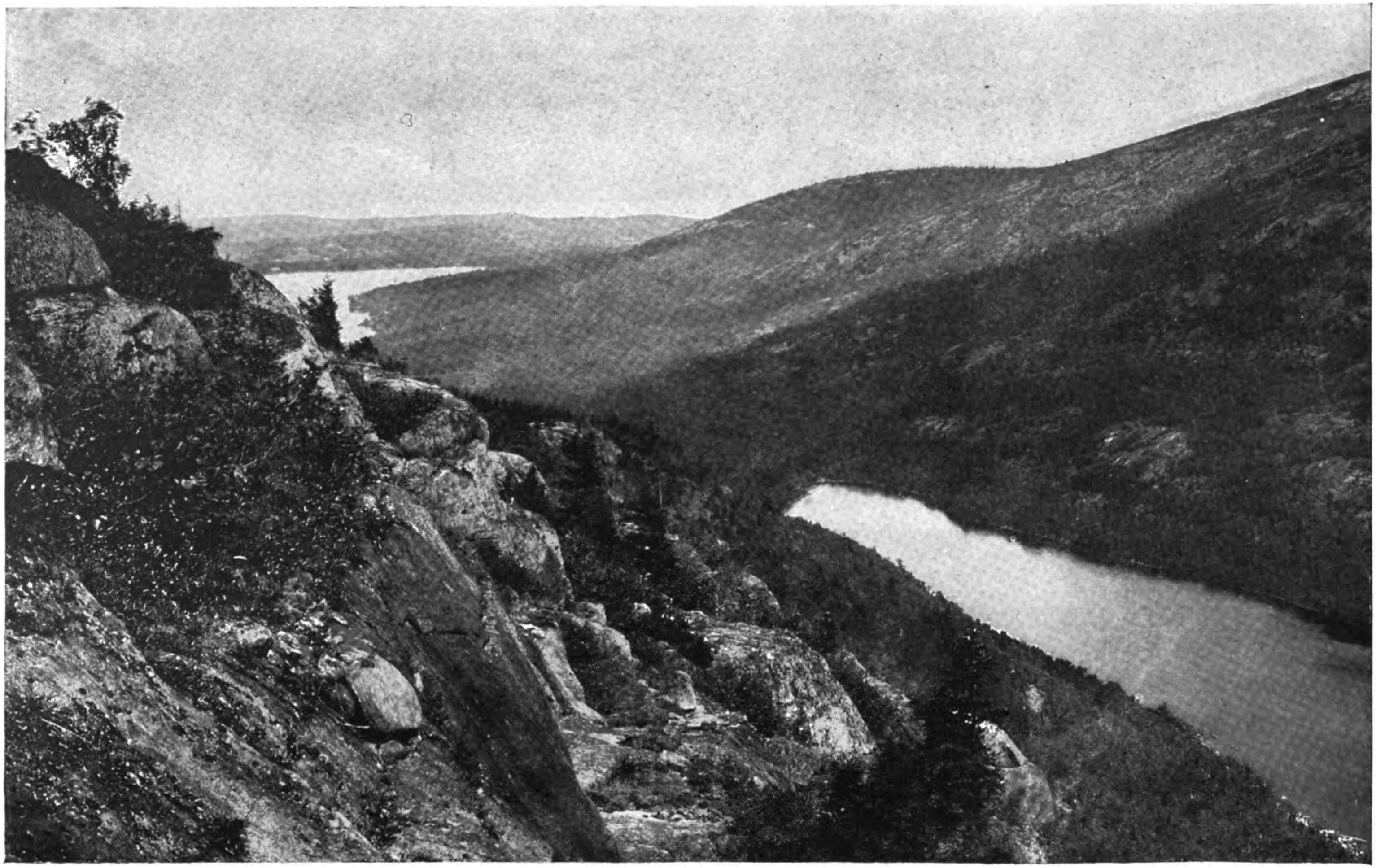
Now it so happens that nearly if not quite all the native plants which originally inhabited the forested areas have a peculiarly modified root structure which renders it impossible for them to grow in any soil but the moist and sponge-like forest humus (leaf-mold).

The first effect upon the native vegetation, then, of clearing and burning the forested areas is the complete annihilation of countless individuals, representing hundreds of species of wild flowers and ferns, which make much of the original charm of the primitive forest. So complete has been the destruction of the humus layer by the cutting and burning of lands through many generations that it is well-nigh impossible to find within 50 miles of our large towns any areas of appreciable extent where the original wild flowers of the forest can now be seen.

This calamity, as it is viewed by lovers of nature, does not stop, however, with the mere destruction of the native wild flowers and ferns; but, through the upsetting of nature's equilibrium, a much more serious situation is evolved. Very briefly, the process is this: The cutting of the forests, with its consequent drying out or burning away of the humus (leaf-mold), destroys, as already stated, the native forest vegetation; the destruction of the native plants has its immediate effect upon the feeding and breeding of the native insects, which nature has through countless ages made dependent upon them and which rarely if ever become troublesome to the farmer.

The destruction of the food-plants of the native insects, depleting or locally exterminating the native insect species, again has its effect upon the native birds, which through ages have depended upon the indigenous insects. The destruction of the native vegetation, furthermore, has a direct effect also upon the native birds and mammals, in that their natural breeding haunts and hunting grounds are destroyed.

Whether or not the gradual reforesta-



LOOKING DOWN FROM PEMETIC MOUNTAIN

A deep gorge plowed by the seaward flowing ice-sheet through the once solid granite mass whose boldly sculptured remnants form today the Mount Desert Mountains. The view is taken looking northward from the precipitous side of Pemetic Mountain. Eagle Lake, whence the water supply for Bar Harbor and the northern side of the island is chiefly drawn, shows in the distance.

tion of our burned or deforested areas will in the course of hundreds or thousands of years develop a sufficient humus carpet to support again the original forest flora and with it the forest fauna, it is of course impossible to say. It is, however, unfortunately apparent that, should that time ever come in the future history of our continent, the original native plants and animals will have become so depleted that the task of resettling future forests with indigenous life will be an impossible one.

It has, therefore, long seemed to the writer that the only way in which to conserve for the enjoyment and study of future generations any portions of our country which by good fortune are still somewhat in their natural condition is the reservation of all such tracts as may properly be set aside, with the explicit stipulation that they be left essentially in the hands of Nature herself to care for.

This brings me to the crucial point: where is the best spot, if only a single spot can be thus preserved, for the perfection of this ideal? A detailed knowledge of the geography; the flora, and to some extent the soil conditions of eastern North America, acquired through 25 years of active exploration in New England, the Maritime provinces, Quebec, Newfoundland, and Labrador, naturally brings several regions to mind; but as a single area within the possible reach of this hope, the Island of Mount Desert, with its adjacent islets and headlands, stands out as offering the greatest natural diversity.

This comes obviously from the fact that Mount Desert is the highest land on the Atlantic coast of North America south of the Gulf of St. Lawrence, its hills reaching altitudes of almost montane character.

The exposed headlands and bogs of the Mount Desert region support between two and three hundred species of plants which are typical of the arctic, subarctic, and Hudsonian regions of America, and which on the eastern coast of New England or the alpine summits of the White Mountains reach their actual or approximate southern limits—such plants, for instance, as the black crowberry (*Empetrum nigrum*), the baked-apple berry (*Rubus Chamæmorus*), the creeping juniper (*Juniperus horizontalis*), the Greenland sandwort (*Arenaria grœnlandica*), the rose-root (*Sedum roseum*), and the Banksian pine (*Pinus Banksiana*).

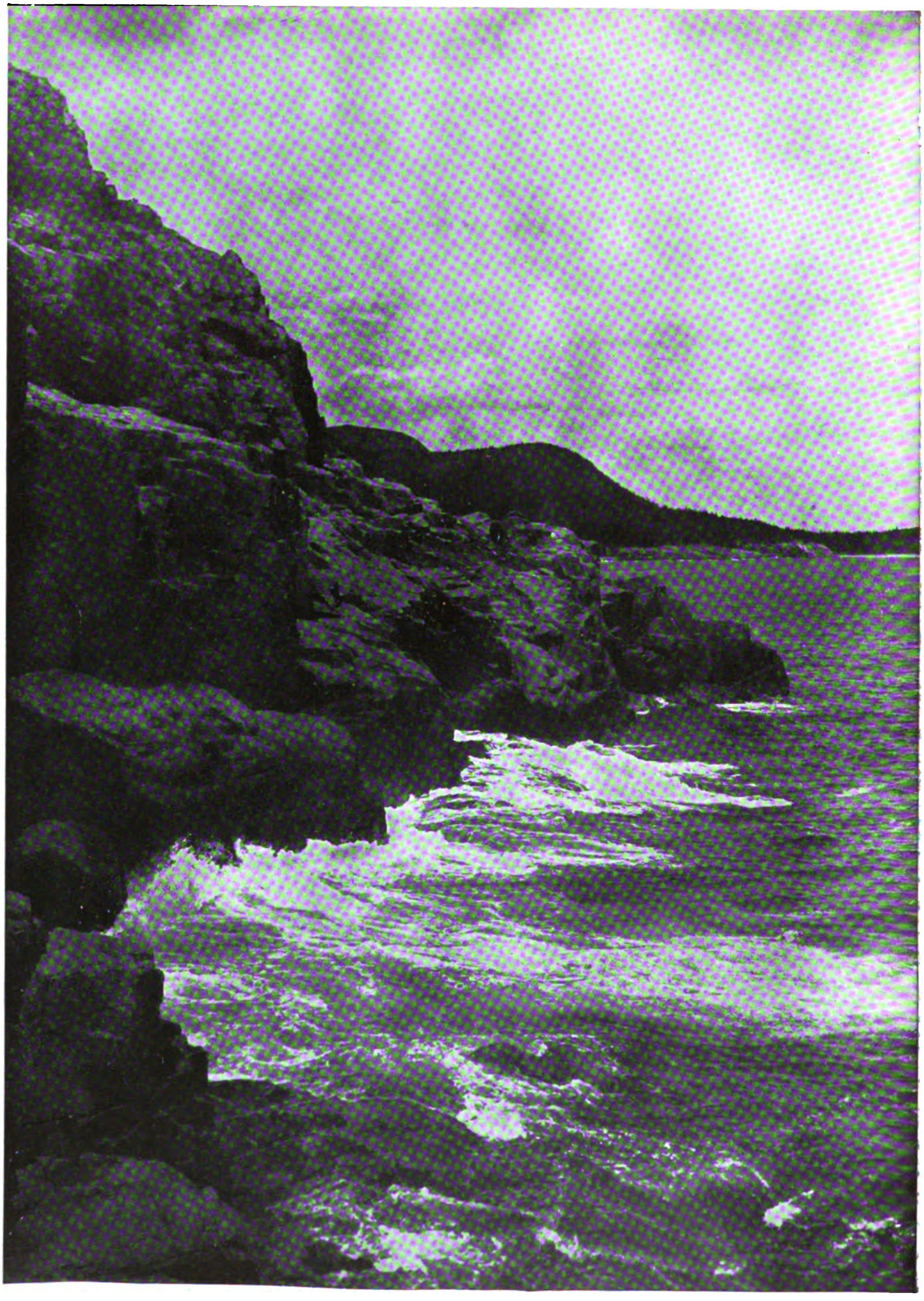
But the flora of the Mount Desert region is not by any means entirely arctic or subarctic. There we find essentially all the common plants of the Canadian Zone, and mingling with them in sheltered nooks or meadows or on warm slopes, many scores of plants which reach their extreme northern or northeastern limits on Mount Desert or the immediate coast—such plants as pitch pine (*Pinus rigida*), the bear oak (*Quercus ilicifolia*), the sweet pepperbush (*Clethra alnifolia*), the swamp loosestrife (*Decodon verticellatus*), the meadow beauty (*Rhexia virginica*), and the maple-leaved viburnum (*Viburnum acerifolium*).

This extraordinary accumulation within one small area of the typical plants of the arctic realm, of the Canadian Zone, and in many cases of the southern coastal plain, cannot be duplicated at any point known to the writer.

In its rock and soil composition Mount Desert offers a most attractive possibility. Much of the island consists of granitic rocks, with their consequent acid soils; but the soils derived from some of the metamorphic series, slates and shales, are, judging from the native vegetation, of a basic or even limy character, and many of the swamps are covered not with the heath thickets of acid bogs, but with the characteristic grasses and sedges of sweet areas.

Several plants of the island, sometimes of rock habitats, sometimes of swamps, suggest themselves at once as species, which in their wide range show a strong preference for sweet or limy habitats: the shrubby cinquefoil (*Potentilla fruticosa*), the showy lady's slipper (*Cypripedium hirsatum*), the hemlock parsley (*Conioselinum chinense*), etc.

These features are sufficient, it would seem, to indicate the remarkable possibilities for the future if a tract like Mount Desert can be preserved from the destruction of its natural charms by the judicious guarding of what it now possesses and the re-introduction of what it



OTTER CLIFFS

A splendid granite headland split into huge, titanic blocks by the northern winter's frost and exposed to the unbroken sweep of ocean storms. The famous ocean drive skirts the rocky shore beyond, and the sand beach, which lies between it and Great Head, shows in the distance on the right.

has lost, or presumably lost, both plants and animals.

The location of the island as the playground, habitual or occasional, of a vast and highly intelligent portion of our population also renders it remarkably appropriate for such a natural reservation; and if such a reservation could be established with emphasis laid upon the redevelopment and maintenance of natural and indigenous conditions, its influence upon the intelligent peoples of America would be far-reaching; for it is inconceivable that lovers of nature could enjoy such an ideal area, with its unmolested wild flowers, ferns, birds, and mammals, and with the full beauty of nature everywhere displayed, without desiring and providing a similar blessing—according to the varied opportunities that offer—for themselves and their children in other parts of the nation.

It is therefore earnestly hoped that those who have it within their power will take the proper steps to insure the preservation and true conservation of the area so generously placed at their disposal.

A BOOK OF MONSTERS

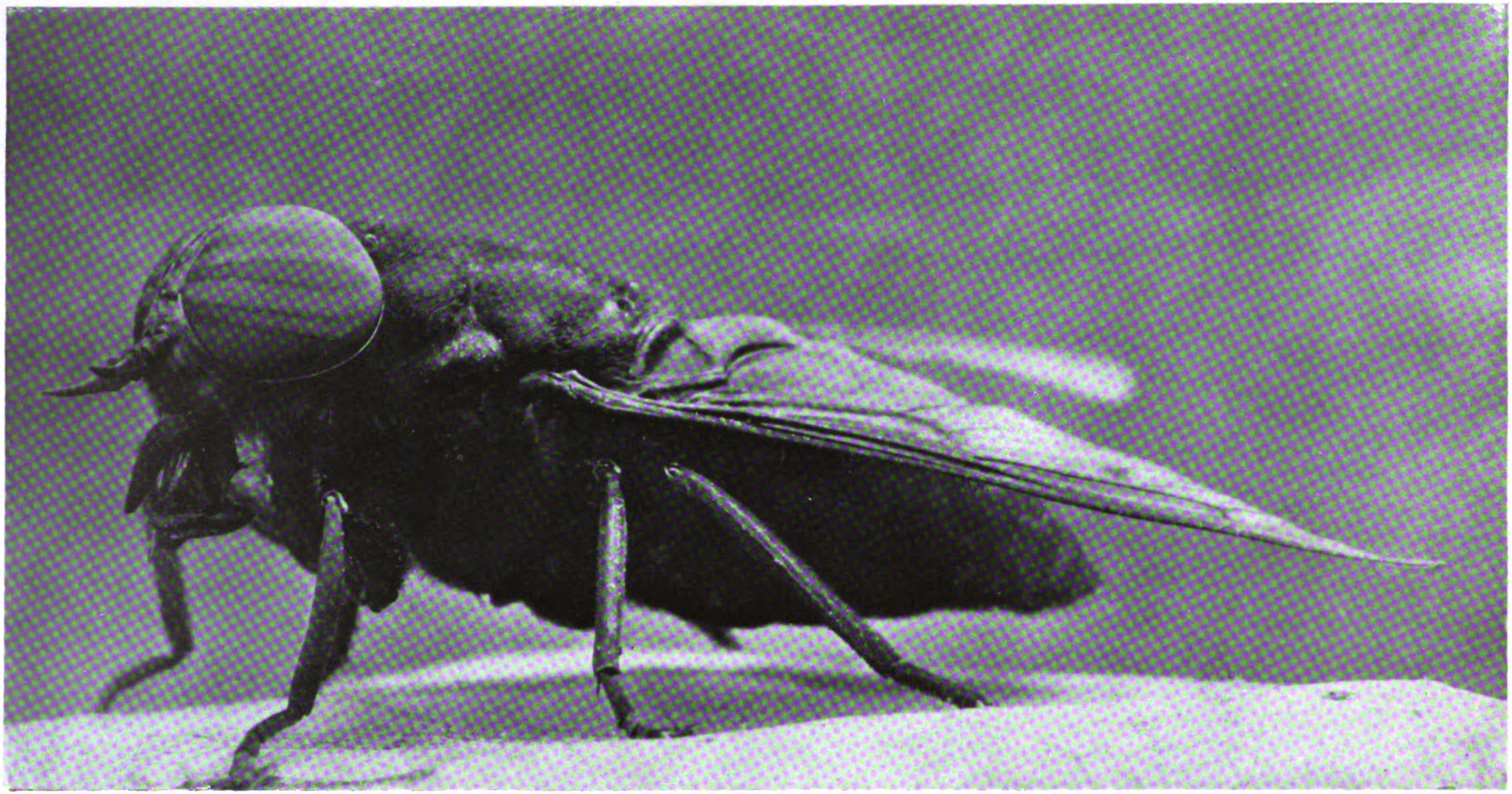
BY DAVID AND MARIAN FAIRCHILD

One year ago the GEOGRAPHIC *printed a series of remarkable photographs of "Monsters of Our Back Yards," by David Fairchild. The series of pictures and the article accompanying them aroused so much comment and stimulated such an interest in the study of these important but tiny creatures that the National Geographic Society urged Mr. Fairchild to photograph more of these monsters. This he has done, and seven additional photographic enlargements are printed here. For the benefit of those readers who are particularly interested in the subject, the Society has arranged for the publication, in book form, of more than a hundred of Mr. Fairchild's pictures of spiders, hornets, wasps, ants, bees, bumblebees, red and black ants, grasshoppers, locusts, cricket-on-the-hearth, cockroach, dragonflies, squash-bug, lantern fly, crane fly, insect hawks, soldier termite, mosquitoes, butterflies and their larvæ, moths, caterpillars, June-bug, ground beetle, clover-leaf weevil, blister beetle, cucumber beetle, scarab, etc., etc.*

Each creature photographed is magnified so many times that few details of the external anatomy escape observation; and as one closely examines the pictures, which sound a new note in the layman's study of nature, he is at once interested and amazed at the new world it discloses and cannot help a curious fascination in learning, for instance, of the existence of the delicate antennæ which enable the cockroach to feel danger before it is seen, or of the wing-piece music-box with which the male cricket calls to its mate in the grass, and other strange and wonderful mechanisms of nature which stand out under the powerful microscope.

The authors tell the life story of each "monster" they present with a fidelity to fact that satisfies the scientist, and at the same time they have invested each "biography" with a charming touch of human interest which takes the reader off into the wonderland of his dooryard and gives an introduction to a new world second only in importance to our own, when measured by the vast effect it has upon human affairs.

The book should be in the hands of every child and adult who would know the wonder world which touches us on every side. As only a limited edition has been printed, those desiring copies should send in their reservations at once on the blank form printed elsewhere in the Magazine.



© GREEN-HEADED HORSEFLY (*Tabenus punctifer*)

There are nearly two hundred species of horseflies in North America, and this creature represents one of the commonest forms. The bands of iridescent green and copper and purple across its enormous eyes make it a beautiful creature to look upon. We never used to think the bite of flies was anything worse than annoying; but recently, since we have discovered the danger of letting the germs of disease into the blood streams of our bodies, we have come to see the ghastly possibilities which lie in the piercing mouthparts of these flies. They suck the blood of animals whose blood streams may be swarming with disease germs, and then fly directly to our houses and puncture our skins with a beak covered with these germs, which slip off into our veins. Until we know that the diseases of the birds and field mice, the coons and 'possums, and all other warm-blooded beasts of a locality are harmless to us, or that it is impossible to transmit them to human beings, it is best to look upon these blood-sucking creatures as winged hypodermic syringes laden with disease. Photo and note by David and Marian Fairchild.

THE pictures of monsters are portraits of creatures which are as much the real inhabitants of the world as we are, and have all the rights of ownership that we have; but, because their own struggle for existence so often crosses ours, many of them are our enemies. Indeed, man's own real struggle for the supremacy of the world is his struggle to control these tiny monsters.

The plague of the Middle Ages, which spread like some mysterious supernatural curse over Europe and carried off millions of people, the yellow fever that has haunted the coasts of South America, the malaria which has strewn the tropics of the world with millions of graves, have been caused by the activities of two monsters so universally present in our homes as to have become almost domesticated creatures—the flea and the mosquito. During these last two decades these have come under our control, and the flies which leave a colony of germs at every footstep will not much longer be tolerated; indeed, every creature that bites and sucks our blood or that crawls over our food and dishes has been placed under suspicion.

Man struggles against these tiny monsters not only for his life and health, but for his food as well. Almost every cultivated plant has its enemy, and some of them have many. The bugs alone, which stick their beaks into all sorts of plants to suck their juices, would starve man out in one or two brief seasons if they in turn were not held in check by enemies of their own. The chinch-bug alone has demonstrated its power to devastate the wheat fields. The bark-beetles that girdle square miles of forest trees, the moths that destroy their foliage, the creatures that burrow into the fruit and fruit trees, the gall-forming flies that form galls on the roots of the grape-vines, able to destroy the revenues of a whole country, the beetle which strips the potato of its leaves, the one which infects with its dirty jaws the melon vines of the South and turns the melon patches brown—these are a few of the vast array of our enemies It would require a book much larger than this one just to enumerate those well known.

It should make every American proud to know that it is the American economic entomologist who has, more than any other, pushed his way into this field and shown mankind how to fight these monsters which destroy his food, his animals, and himself.

But all these fascinating little creatures are not our enemies. We must not forget that man has domesticated certain of the insects, and that gigantic industries depend upon them for their existence.

The honey-bee furnished mankind with sweets during the generations preceding the discovery of the sugar-cane, and the silk-worm furnishes still the most costly raiment with which we clothe ourselves.

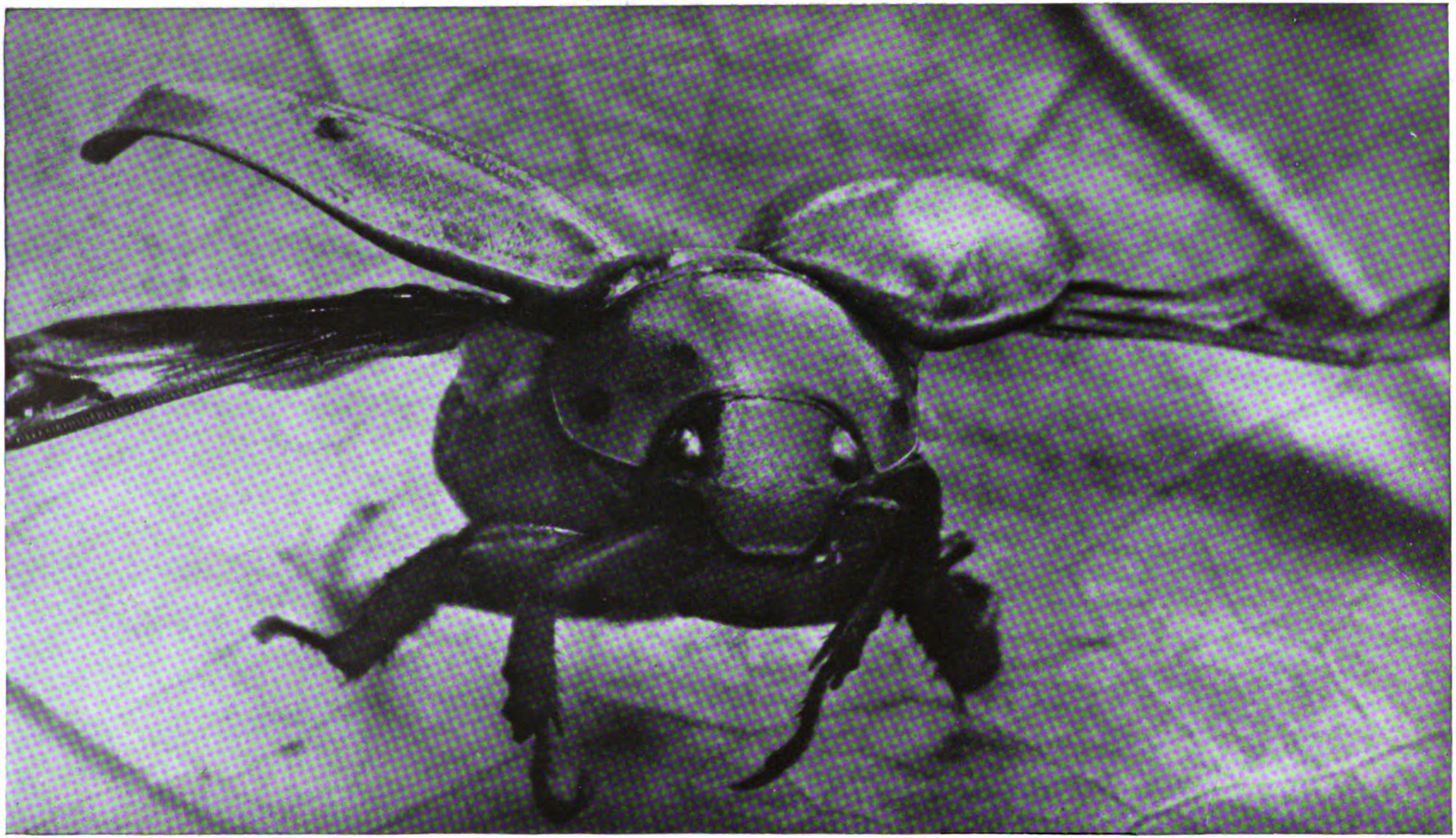
The friends we have in the insect world are those which destroy the pests of our cultivated crops, like the Australian lady-bird beetle, which has been sent from one country to the other to keep in check the fluted scale which is so injurious to the orange orchards, and the parasites of the gipsy-moth, which in Europe helps to keep under control this plague of our forest trees, must certainly be counted as our friends.*

Also they are our friends if, like the spiders, they kill such monsters as suck our blood or make our lives unsafe, or, like the great hordes of wasps and hornets, wage unending warfare against the flies, but which, because they attack us personally if we come too near their nests, we kill on sight. Strangely enough, it is often these same stinging insects which help us by fertilizing the blossoms of our fruit trees. Indeed, many plants are so dependent on these little creatures that they have lost the power of self-fertilizing, and thousands of species of trees and plants would become extinct in a generation without their friendly aid.

The ancestors of some of the creatures pictured in "The Book of Monsters" were buried in the transparent amber of the Baltic many thousands of years ago, and the fossil remains of others date back a million years or more; but while man has been developing his surroundings from the primitive ones of savagery

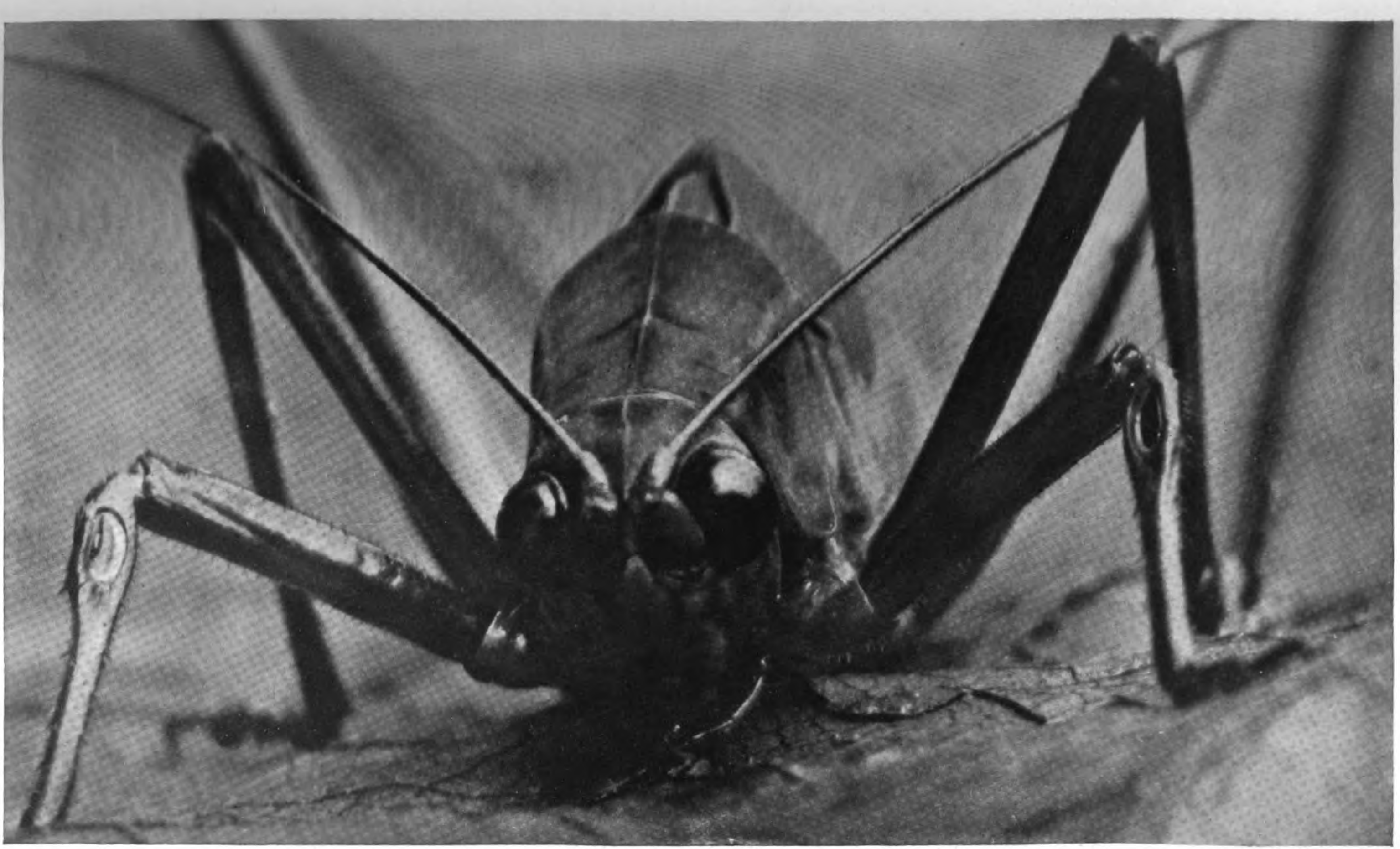
---

* See article by Dr. L. O. Howard, entitled "Explorers of a New Kind," printed on pages 38-67 of this Magazine.



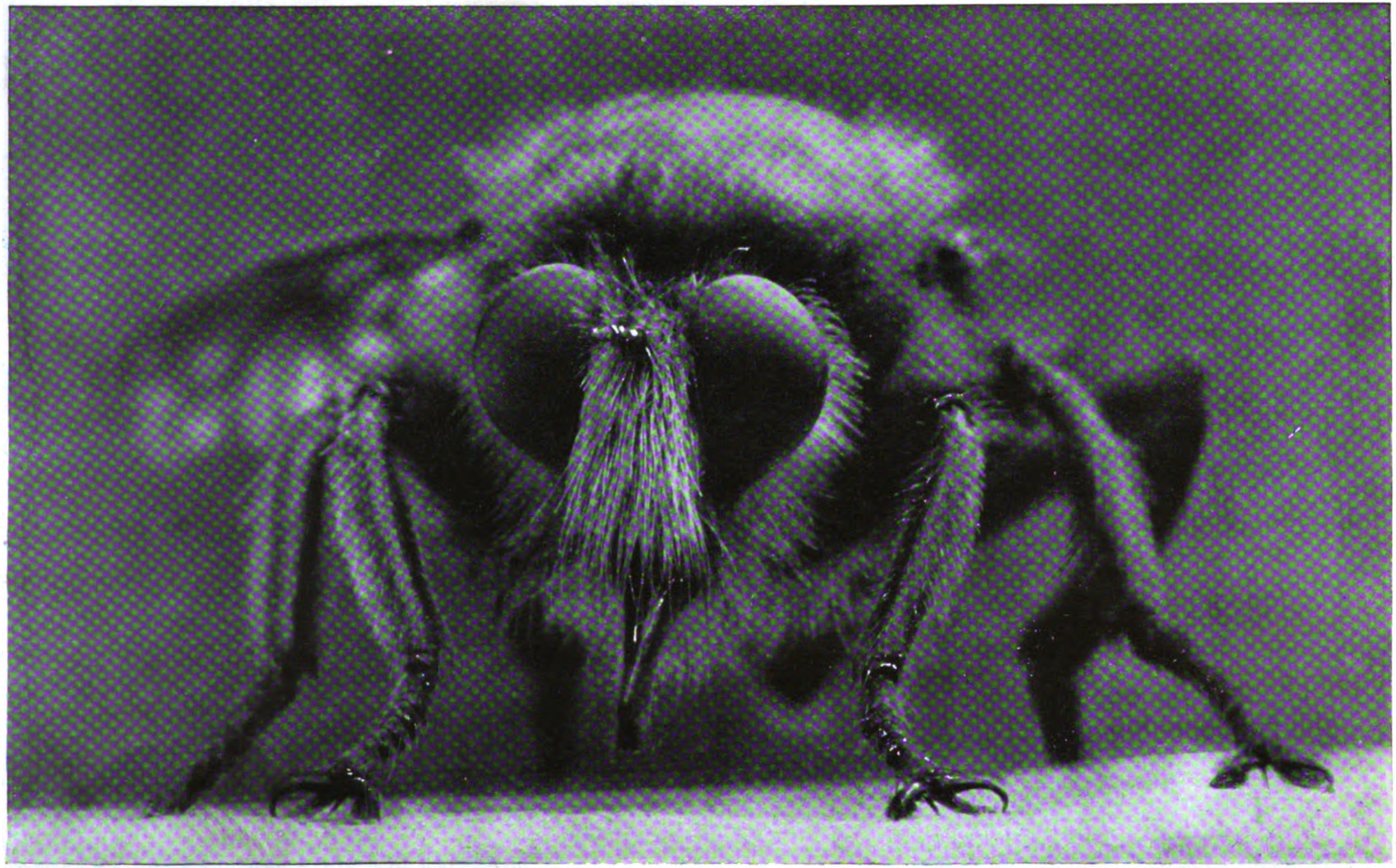
© THE ARMORED KNIGHT: THE SPOTTED VINE CHAFER (*Pelidnota punctata*)

How often one sees lame butterflies limping along in their flight because their wings have been injured by the rose bushes or by striking against the pine needles, or have been nipped by some hungry bird. The beetles, when they alight, fold up carefully each delicate wing, close down over them polished covers as hard almost as steel and fitting as closely as the engine covers of an automobile. When one thinks that man has just begun to fly, whereas the beetles flew perhaps a hundred million years or more ago, these wings and their most perfect chitinized wing covers are deserving of our wonder and of our admiration, too. Photo and note by David and Marian Fairchild.



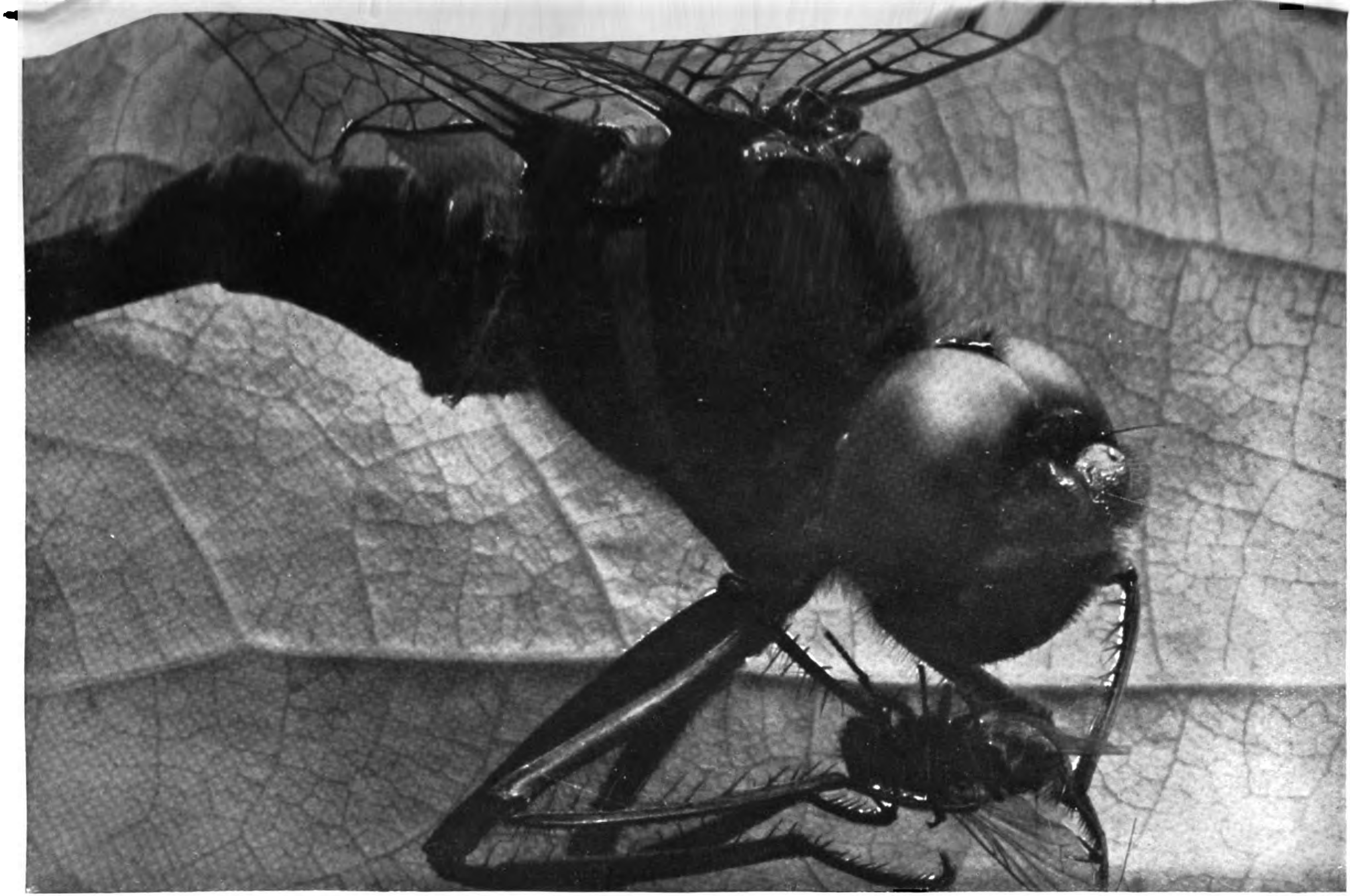
© THE KATYDID (*Scudderia*)

How marvelously equipped such a creature as this is to live! The great eyes, with many facets, enable it to see by night as well as by day. Its long, slender antennæ catch the faintest odor, and probably are sensitive to a host of perfumes that we do not know. In the front of each fore leg, just below the knee, is a dark, sunken area—the ear—with which it can probably hear sounds too faint for our ears, and by moving them can tell from which direction the sounds come. Its long muscular legs enable it to jump great distances, and its wings not only enable it to fly well, but in the males are provided with an apparatus near their base for making a musical sound. This sound is made by half opening the long green wings and closing them again rapidly. While the wings are opening no sound is produced; as they close the characteristic sounds so like the words "Katy did" are made. Photo and note by David and Marian Fairchild.



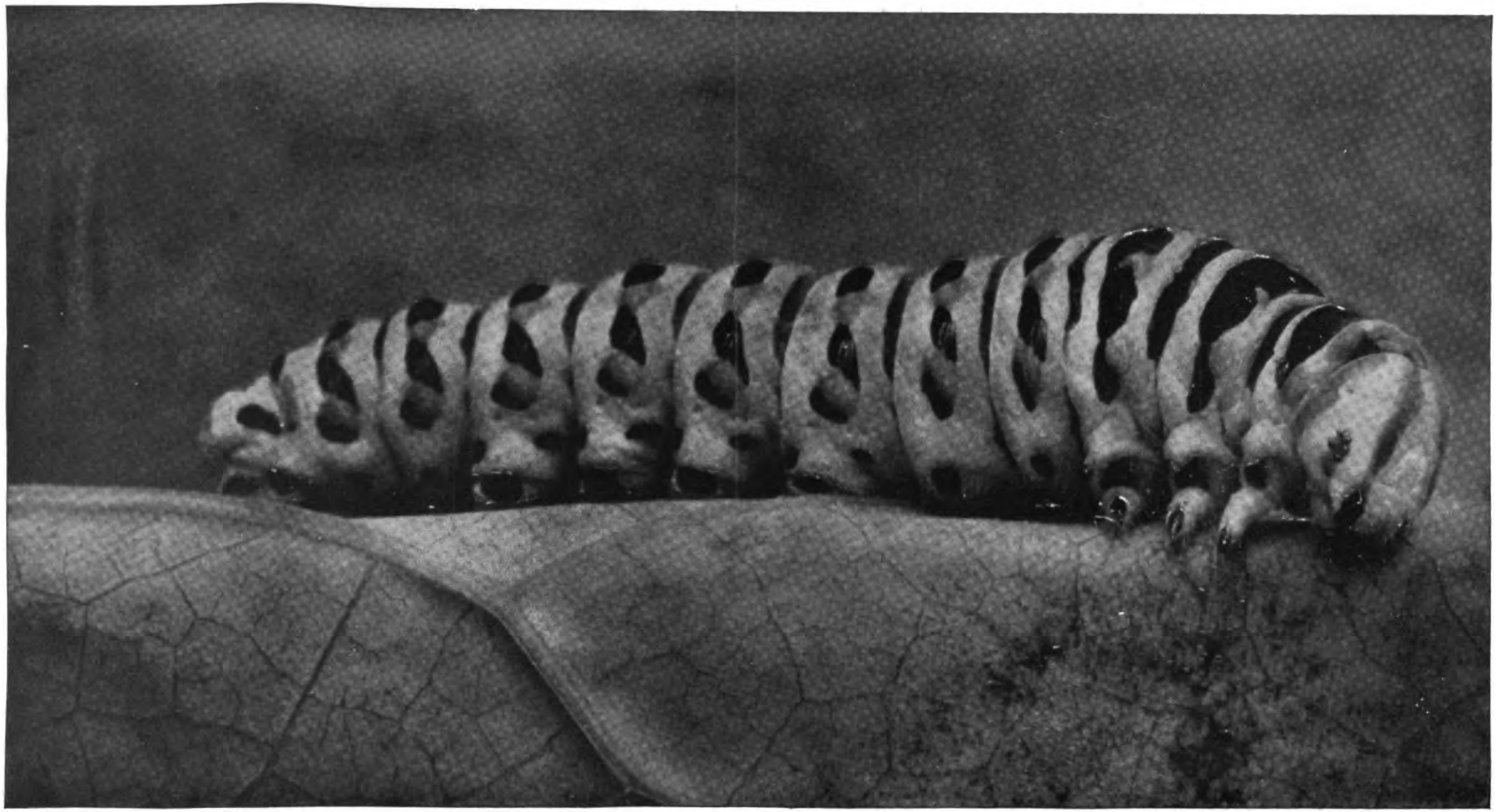
© ONE OF THE ROBBER FLIES (*Dasyllis grossa*)

When I learned that this powerfully winged, hairy fly tears beetles' wings from off their backs with that wedge-shaped beak of hers and sucks the blood of bees and wasps, it gave me a different idea of the great fly family, which hitherto I had thought was made up of defenseless creatures like the house-fly. Of all the insects we have photographed, few have seemed to be more thoroughly fearless or more ugly than the robber flies. Photo and note by David and Marian Fairchild.



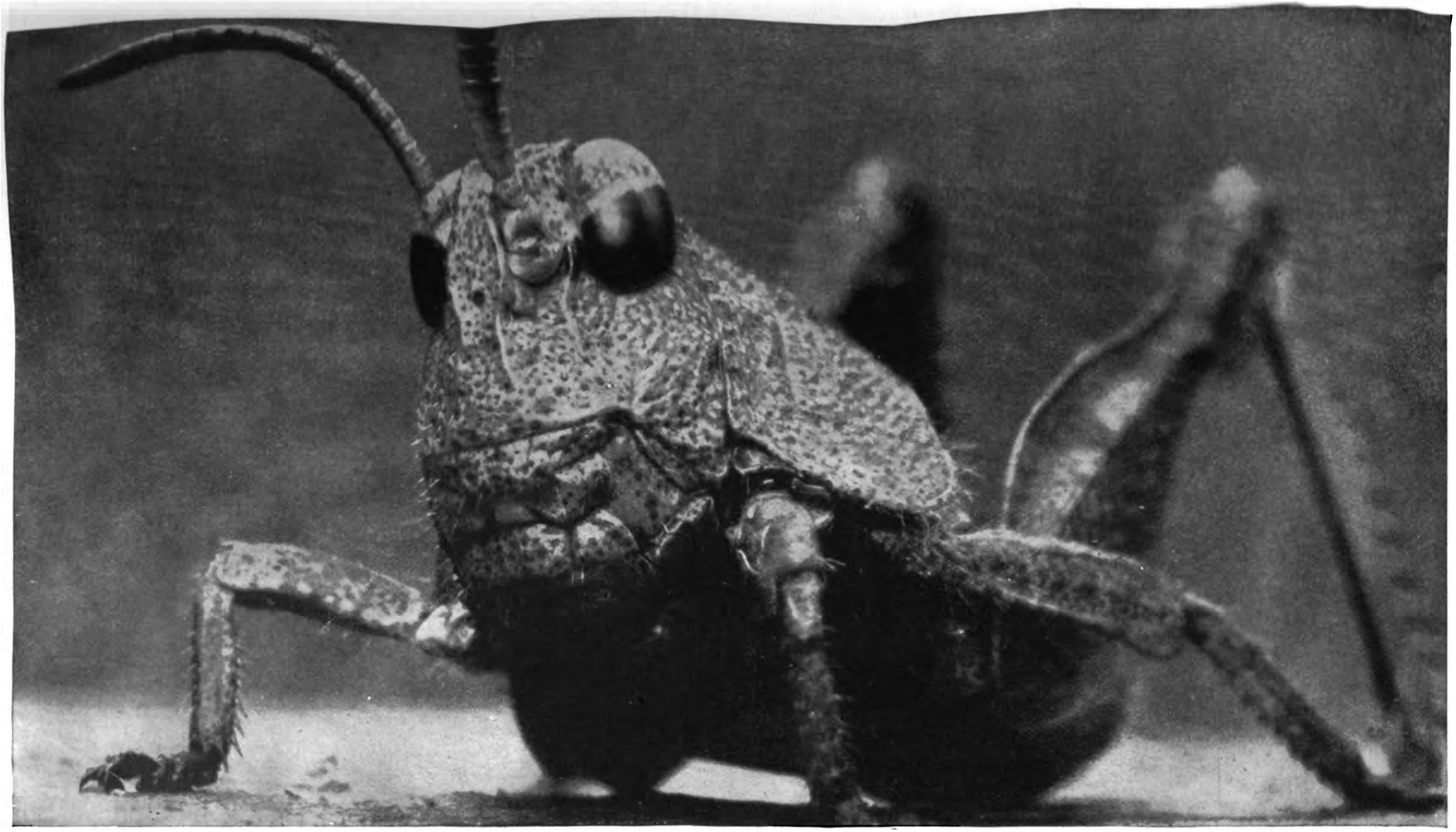
© THE DRAGON-FLY AND ITS VICTIM (*Macromia*)

When I caught the dragon-fly whose picture is shown here, I held it by the wings, and, catching a fly that buzzed about the table, dropped it in its claws. Without a moment's hesitation its mouth opened wide and closed upon the fly. I watched it disappear underneath its great upper lip and almost fancied I could hear its shell crack as the powerful jaws and lower lips turned it around and around in the mouth. A few seconds



© NOT GOOD TO EAT

Have you never wondered at the temerity with which certain of these slow-moving, helpless creatures expose themselves to the attacks of their enemies? In a world so full of hungry, winged beings it does seem strange; and when the markings are black and white, or some such striking color in contrast with the leaves or bark, the temerity seems even more extraordinary, until one learns the simple fact—these creatures are not good to eat. What a protection! It would seem to rival the sting of the bumblebee, the poison fangs of the spider, or the venom of the centipede in its efficacy as a protective weapon. Not good enough to eat! Supposing that the fly and the mosquito were equipped with some flavor distasteful to the insectivorous birds, if cattle were not good to eat, nor sheep, nor hogs, nor any living, breathing things; what a change there would be in a world like ours! And yet to chemists there is very little difference between some compounds that are good to eat and others that are deadly poison, no greater than that between the poison bitter almond and the sweet one of our dinner table. "Not good enough to eat" is written on this creature's back in black and white so plainly that any bird with any sense or any past experience will pass it by untouched, not even pecking at it. Photo and note by David and Marian Fairchild.



© THE KING GRASSHOPPER (*Hippiscus, sp.*)

This young king grasshopper is probably twenty days old and its wings have not developed, but it can jump a hundred times its length, whereas man can scarcely cover three times his length at a leap. When its wings grow and its internal air sacs fill with air it can sail away for miles. One species of this great family can sail for a thousand miles before the wind, and they go in such numbers that they make a cloud 2,000 square miles in extent. Its great front lip hides a pair of jaws as effective as a hay-chopper, and it has an appetite as voracious as that of a hippopotamus. This voraciousness and these jaws are what have made several of its relatives the plague of mankind. They multiply in such numbers as to baffle all calculation, and every living green thing for thousands of square miles disappears down their throats, leaving the country they infest desolate. The great famine of Egypt, mentioned in the book of Exodus; the grasshopper years of Kansas, which ruined thousands of families on our plains, and more recent devastations in Argentina and South Africa are examples of the tremendous effects which the migratory locusts have had upon the happiness of mankind. As this young king grasshopper stands looking so inquiringly at one with his varicolored eyes, each of which is composed of hundreds of facets, I cannot help thinking that he represents a creature quite as fascinating and actually more dangerous than the East African monsters of our school geographies. It is hard to understand why he should live only a single season, crowding the to the almost inconceivably complicated ones of civilized life, these creatures, most of them at least, seem to be leading essentially the same kind of lives that they led hundreds of thousands of years ago.

They have powers which neither man nor any other mammal ever dreamed of having.

Some have powers of flight which enable them to sail a thousand miles before the wind. Others can jump a hundred times their own length. One of these monsters can manufacture a liquid rope as easily as mammals produce milk, and with it weave aërial nets to trap their pray, or by attaching it can drop from the dizziest heights without danger, and when the rope has served its purpose they eat it up.

Their weapons of defense are comparable to the deadly ones that only poisonous serpents have. If they were larger they would be in fact what legend pictures the dragons to have been.

The unthinkably old germ plasm of these species produces creatures which act with a precision of purpose and a degree of absolute self-sacrifice which cannot fail to stagger the most conscientious of the human race. They might even make one wonder whether the fulfillment of biological life does not consist in sacrifice of the individual for the good of the species to which it belongs.

Certain it is that human thought is now drifting away from the consideration of the individual and is coming to pay more attention to the species and the things which affect its development. This is a picture-book produced in the playtime hours of two busy people. It is a collection of actual photographs of a few of the small-sized monsters which inhabit the tall grass, the flower garden and vegetable garden, the pines and oaks of a place in the woods of Maryland.

If it should show to others a world of new and fascinating things it would be simply doing for them what the taking of the photographs has done for us—opened the door into a realm of real life, of a terrible struggle to live, which is as full of fascination as the dragon tales of old Japan. At the same time it makes us realize what vast and yet untouched fields of material value lie in the efforts man is making to outwit and circumvent, and even perhaps to exterminate, such of the monsters as encroach upon his own environment.

If you compare these photographs with those to be found in most books on insects you will find that they differ in several particulars. They are all either front views or side views of the creatures, whereas those in books on entomology are generally views from above. Imagine a book on the horse in which only top views were shown, or a guide to a zoölogical garden illustrated with the various wild beasts photographed from above. It is true that, being so much larger, we generally look down at these monsters; but a mouse also generally runs along the floor or under our feet, and yet a zoölogist pictures it from the same point of view that he does an elephant. Crows look down upon us, yet I imagine that no one will admit that the crow's impression of human beings is as correct or as interesting as that which we have of ourselves. Every creature has a right to be portrayed from its own level, and the reason these photographs are unusual is because they carry out this principle and do each creature justice.

U
G
&E

Cities Served

Altoona, Pa.
Birmingham, Ala.
Bloomington, Ill.
Buffalo, N. Y.
Colorado Springs, Colo.
Columbia, Pa.
Elmira, N. Y.
Hartford, Conn.
Harrisburg, Pa.
Houston, Tex.
Knoxville, Tenn.
Lancaster, Pa.
Leavenworth, Kan.
Little Rock, Ark.
Lockport, N. Y.
Memphis, Tenn.
New Orleans, La.
Richmond, Ind.
Terre Haute, Ind.
Wilkes-Barre, Pa.

SO LONG as cities continue to grow, their gas, electric, and transportation properties will grow with them. In many States these properties are regulated and protected by Public Service Commissions.

¶Their securities afford the highest return with the lowest risk of any of the standard investments.

¶The most successful gas, electric and transportation companies are those which, through centralized control, participate in:

(a) Expert management;
(b) Highest engineering skill;
(c) Wholesale purchases of supplies;
(d) Financial co-operation and credit.

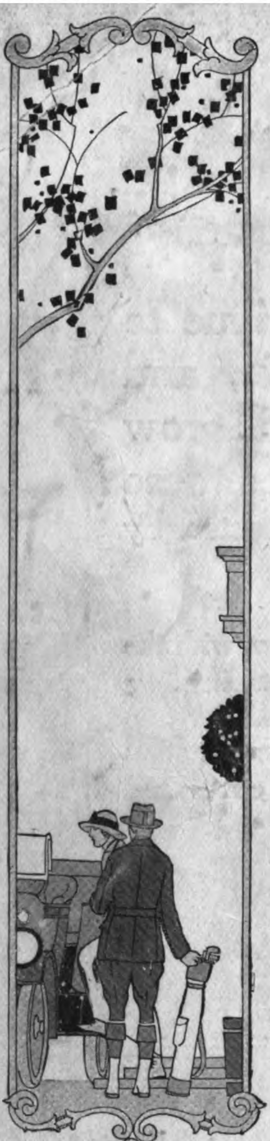
These benefits all result in low operating cost, increasing business, efficient and progressive service, and reasonable rates to consumers.

¶THE UNITED GAS & ELECTRIC CORPORATION serves, through operating companies, twenty prosperous and growing municipalities in the United States with a total population in excess of 2,200,000. For the year ending May 31st, 1914, the gross revenue of the operating companies was over $28,000,000 and the net operating revenue over $11,000,000.

¶Your local banker and broker have information concerning the earnings of this Corporation and the financial and physical condition of its operating properties.

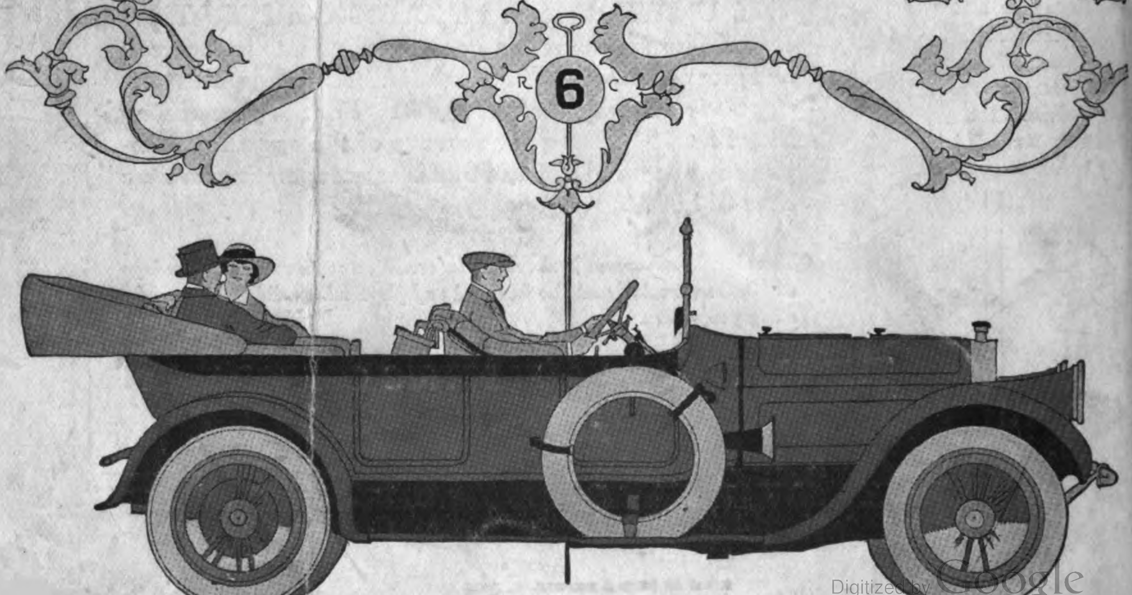
THE UNITED GAS & ELECTRIC CORPORATION
61 BROADWAY, NEW YORK

PRESS OF JUDD & DETWEILER, INC.



PIERCE-ARROW

The stomach that calls attention to itself is not a good stomach. The servant who requires your instruction is not serving. The greatest attribute a motor car can have is unobtrusiveness. Service comes first, the service that you can lean upon, that requires neither adjustment nor allowance in your plans.



VOLUME XXVI
NUMBER TWO

THE NATIONAL GEOGRAPHIC MAGAZINE

AUGUST, 1914

CONTENTS

Map of Europe, with New Balkan Boundaries
Size, 18 x 22 inches

Experiences in the Grand Canyon
WITH 71 ILLUSTRATIONS — ELLSWORTH AND EMERY KOLB

The Cape Cod Canal
WITH 4 ILLUSTRATIONS — J. W. MILLER

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D.C.

2.50 A YEA
25 CTS A COPY

NATIONAL GEOGRAPHIC SOCIETY

HUBBARD MEMORIAL HALL

AVENUE OF THE PRESIDENTS AT M STREET, WASHINGTON, D. C.

HENRY GANNETT . . . PRESIDENT

O. P. AUSTIN . . . . . . SECRETARY

GILBERT H. GROSVENOR, DIRECTOR AND EDITOR

JOHN OLIVER LA GORCE . ASSOCIATE EDITOR

O. H. TITTMANN . . . VICE-PRESIDENT

JOHN JOY EDSON . . . . TREASURER

F. B. EICHELBERGER . ASSISTANT TREASURER

GEORGE W. HUTCHISON, ASSISTANT SECRETARY

BOARD OF MANAGERS

1912-1914

JOHN JOY EDSON
President Washington Loan & Trust Company

CHARLES J. BELL
President American Security and Trust Company

DAVID FAIRCHILD
In Charge of Agricultural Explorations, Dept. of Agric.

C. HART MERRIAM
Member National Academy of Sciences

O. P. AUSTIN
Statistician

GEORGE R. PUTNAM
Commissioner U. S. Bureau of Lighthouses

GEORGE SHIRAS, 3D
Formerly Member U. S. Congress, Faunal Naturalist, and Wild-Game Photographer

GRANT SQUIRES
New York

1913-1915

FRANKLIN K. LANE
Secretary of the Interior

HENRY F. BLOUNT
Vice-President American Security and Trust Company

C. M. CHESTER
Rear Admiral U. S. Navy, Formerly Supt. U. S. Naval Observatory

FREDERICK V. COVILLE
President of the Washington Academy of Sciences

JOHN E. PILLSBURY
Rear Admiral U. S. Navy, Formerly Chief Bureau of Navigation

RUDOLPH KAUFFMANN
Managing Editor The Evening Star

T. L. MACDONALD, M. D.

S. N. D. NORTH
Formerly Director U. S. Bureau of Census

1914-1916

ALEXANDER GRAHAM BELL
Inventor of the telephone

HENRY GANNETT
Chairman of U. S. Geographic Board

J. HOWARD GORE
Prof. Emeritus Mathematics, The Geo. Washington Univ.

A. W. GREELY
Arctic Explorer, Major Gen'l U. S. Army

GILBERT H. GROSVENOR
Editor of National Geographic Magazine

GEORGE OTIS SMITH
Director of U. S. Geological Survey

O. H. TITTMANN
Superintendent of U. S. Coast and Geodetic Survey

JOHN M. WILSON
Brigadier General U. S. Army, Formerly Chief of Engineers

To carry out the purpose for which it was founded twenty-three years ago, namely, "the increase and diffusion of geographic knowledge," the National Geographic Society publishes this Magazine. All receipts from the publication are invested in the Magazine itself or expended directly to promote geographic knowledge and the study of geography. Articles or photographs from members of the Society, or other friends, are desired. Contributions should be accompanied by an addressed return envelope and postage, and be addressed:

GILBERT H. GROSVENOR, EDITOR

CONTRIBUTING EDITORS

A. W. GREELY

C. HART MERRIAM

O. H. TITTMANN

ROBERT HOLLISTER CHAPMAN

WALTER T. SWINGLE

ALEXANDER GRAHAM BELL

DAVID FAIRCHILD

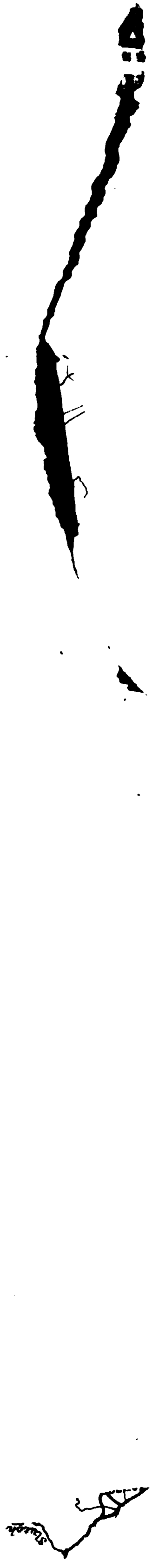
HUGH M. SMITH

N. H. DARTON

FRANK M. CHAPMAN

Entered at the Post-Office at Washington, D. C., as Second-Class Mail Matter

Copyright, 1914, by National Geographic Society, Washington, D. C. All rights reserved.



YON

and Emery
d Canyon of
y all parts of
ys they have
obtain a com-
outhwest for
are unable to
is considered
Canyon; the
and the third
ajor Powell's
lish this feat
river of 6,000
ve a graphic
haracter and

nents, striking
et with all th

were amusedly
e. They espe-
orts to appear
our eye on the
at had rushed
e young bucks,
rand Canyon,
other when we
by a sudden
mule, as a dog
The dog flat-
s the mule's
his head.
out with
dogs to

NA

HENR
O. P.
GILBE
JOHN

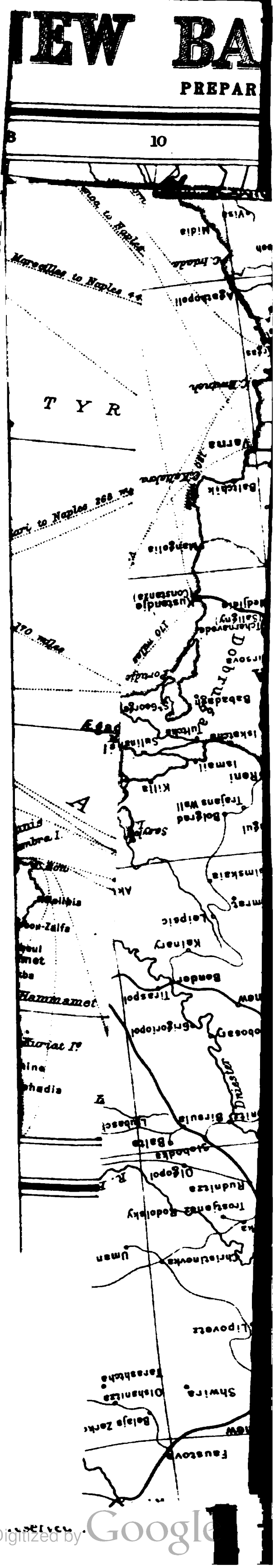
JOHN
Pr
CHAR
Pr
a
DAVI
In
P
C. H
Me
S
O. P.
Sta
GEOR
Co
L
GEOR
Fo
GRA
Ne

T
ago,
the
from
direc
Arti
are
turn

A.
C.
O.
R
W

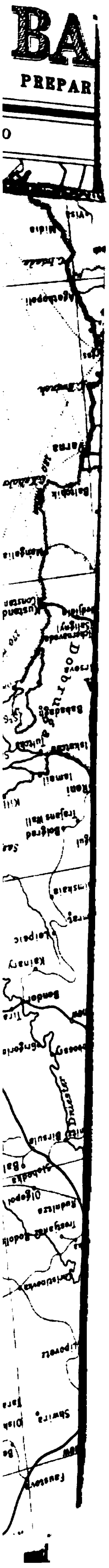
IEW BA

PREPAR


10
Marseilles to Naples
Brindisi to Naples 268 m
TYR
A
Varna
Baltchik
Mangalia
Kustendje (Constanza)
Tchernavoda
Dobrudja
Babadag
Sulina
Ismail
Reni
Kilia
Trajans Wall
Bolgrad
Leipsic
Bender
Tiraspol
Grigoriopol
Dniester
Balta
Olgopol
Rudnitza
Uman
Lipovetz
Tarashcha
Shwira
Faustova
Hammamet

Entered at the Post-Office at Washington, D. C.,

Copyright, 1914, by National Geographic Society, Washington, D. C.



VOL. XXVI, NO. 2 WASHINGTON AUGUST, 1914

THE
NATIONAL
GEOGRAPHIC
MAGAZINE

EXPERIENCES IN THE GRAND CANYON

BY ELLSWORTH AND EMERY KOLB

For twelve years the authors of this article, Messrs. Ellsworth and Emery Kolb, have lived at the head of the Bright Angel trail, in the Grand Canyon of Arizona. From this headquarters they have penetrated to practically all parts of the Grand Canyon and of its less-known tributary canyons. Always they have taken their cameras with them, for their primary object has been to obtain a complete photographic record of the unequaled scenic wonders of the Southwest for the enjoyment and instruction of the millions of Americans who are unable to visit them. The first part of this article describes a trip to what is considered the most beautiful of the tributary canyons, the Cataract Creek Canyon; the second part a hard journey to the canyon of the Little Colorado, and the third part their "big trip," as Messrs. Kolb call it, a duplication of Major Powell's famous journey down the Green and Colorado rivers. To accomplish this feat they passed through seventeen canyons, with a total descent on the river of 6,000 feet. The marvelous photographs published with this article give a graphic conception of the dangers encountered and of the extraordinary character and grandeur of this most stupendous chasm.

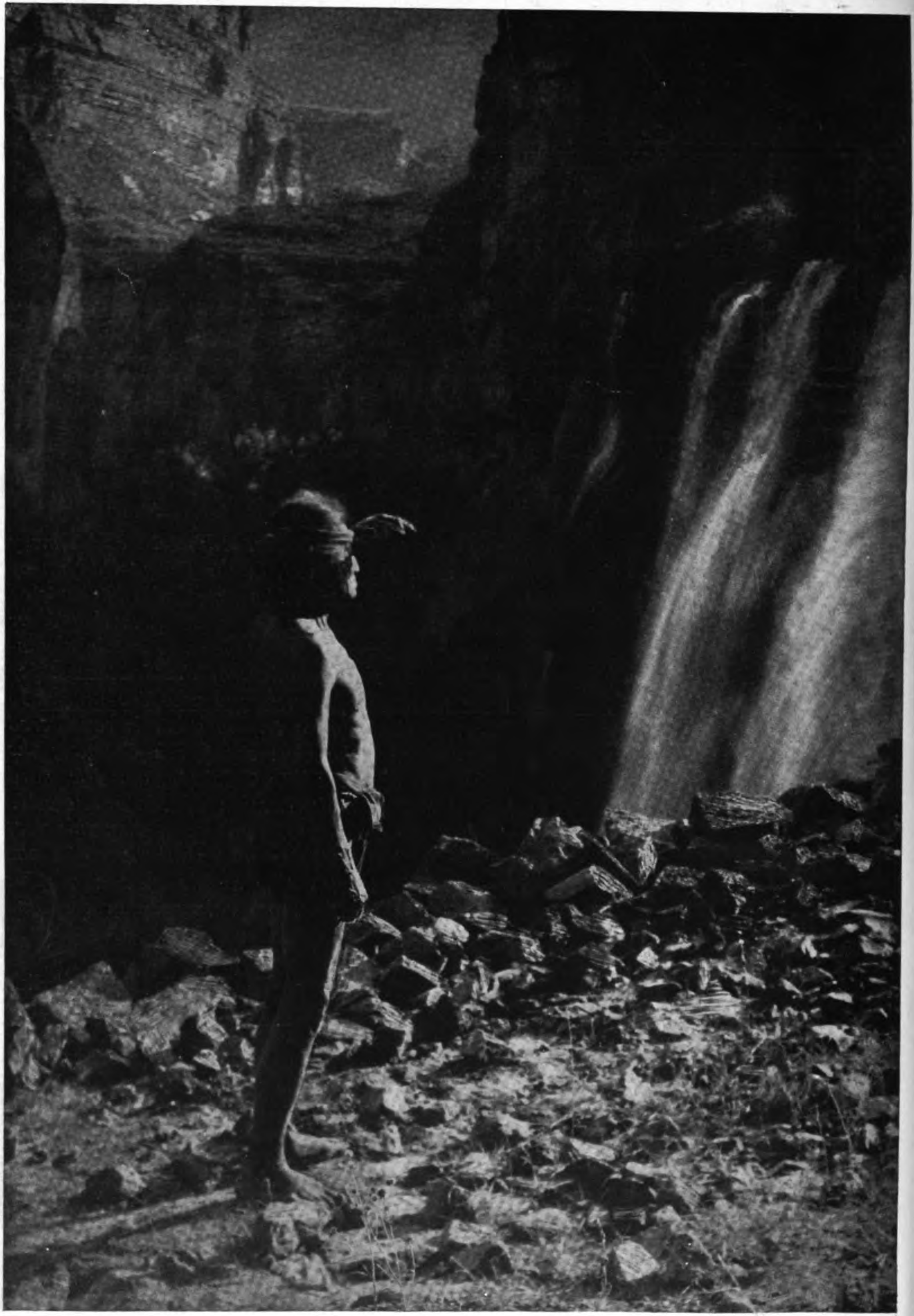
I

A JOURNEY TO CATARACT CREEK CANYON

OURS was no triumphal entry as we toiled our weary way through the little village of Havasupai Indians, in the bottom of Havasu, or Cataract Canyon, 50 miles west of the Bright Angel trail, in the Grand Canyon, one of us astride a mule as weary as ourselves, the other walking, while one of our two pack-burros, with his precious load of cameras and dry plates, stampeded down the road, trying to shake off some yelping curs that were following at his heels. The other burro, meanwhile, was standing his ground and was circling after his particular opponents, striking at them with his fore feet with all the celerity of a boxer.

Many of the 200 natives were amusedly watching the performance. They especially enjoyed our own efforts to appear unconcerned and yet keep our eye on the pack of vicious dogs that had rushed upon us so suddenly. Some young bucks, frequent visitors to the Grand Canyon, grinned and nudged each other when we were almost dismounted by a sudden spasm on the part of the mule, as a dog finally laid hold of his heel. The dog flattened himself out on his belly as the mule's feet twinkled harmlessly over his head.

Then "Captain Burro" came out with a club and stones and drove the dogs to



"CAPTAIN BURRO" Photo by Kolb Brothers

Gazing at "The Bridal Veil Falls" in Havasu Canyon, Cataract Creek, probably the most beautiful of all the lateral canyons which empty into the Colorado River. He had a splendid figure in spite of his many years and earned the dollar we paid him for posing. It was a chilly September morn, and the mist rising from the falls gave him an uncomfortable bath.

the bushes. The Captain was an old acquaintance, as were many of the other Indians, and this time at least we were glad to see him. Extending his hand in greeting, with his thin-lipped gash of a mouth spread in his most amiable smile, he inquired not after our health, as you might anticipate, but if we had "plenty sugar," for the Captain was an inveterate beggar. Telling him to come to the camp the next morning, we resumed our journey down the road, as we wished to camp a half mile below that evening. Before we could reach this point we had to cross a rushing creek two or three times. It was with difficulty that we persuaded the burros to make the crossing, and when they did go it was with a violent scramble for the opposite shore. We wondered many times how our plates were faring.

Havasu, or Cataract Creek, is a beautiful stream amid wildly picturesque surroundings. Havasu, freely translated from the language of these natives, signifies "blue water," and when combined with "pai," meaning people, gives them the very poetical name by which they are known — the People of the Blue Water—much more poetical, we think, than their dirty appearance warrants. Havasu Creek is formed by the sudden appearance above the earth of an underground stream; the exact location of its emergence changing from time to time, but always within a small radius a short distance above the village.

Many miles above this place, at a point where caves and sunken rocks make an opening, the water can be heard far below the surface, rushing through its underground chan-

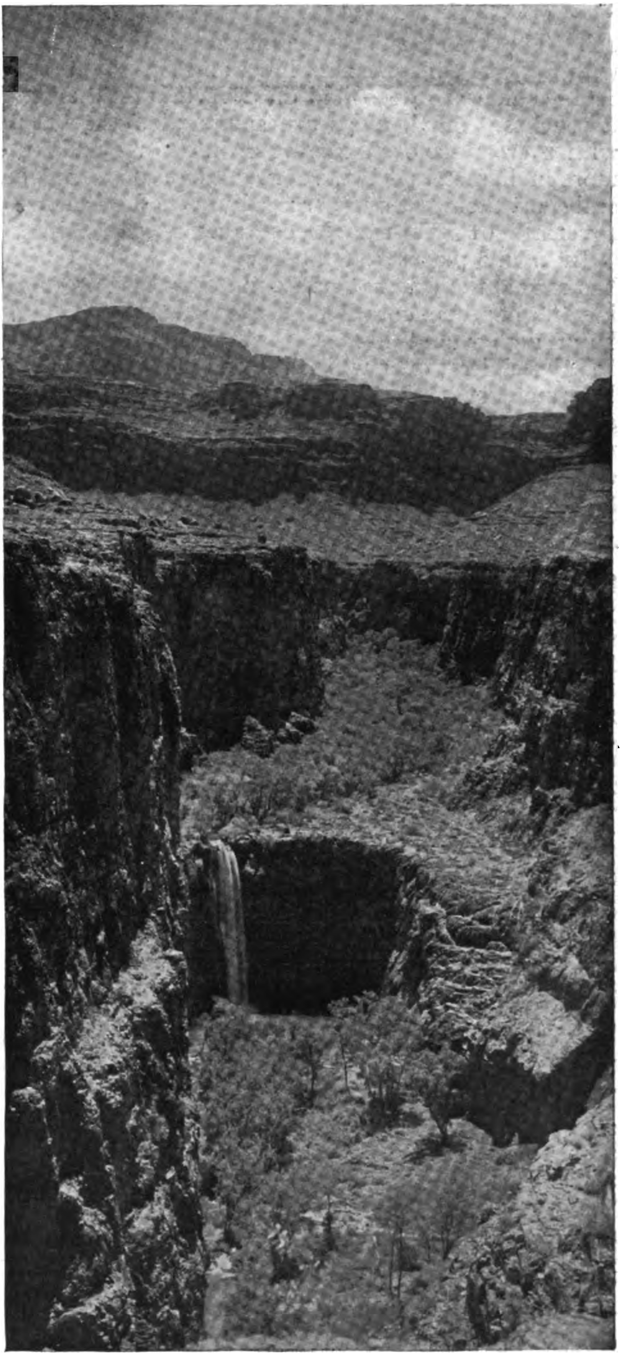


Photo by Kolb Brothers

MOONEY FALLS IN HAVASU CANYON: CATARACT CREEK

The falls are about 180 feet high and are built up by a mineral deposit from the water (see text, page 107) nel. The water is heavily impregnated with mineral—magnesium, lime, and silicate—which are deposited on everything it touches. Small twigs are surrounded with a cream-colored coating an inch or more in diameter; delicate ferns and moss still show their green under newly formed coverings of semi-transparent alabaster.

In many places a temporary barrier has caused the water to pause in its headlong flight; then, coral like, it proceeds to build higher and higher, forming 100-foot precipices, over which it hurls itself. Enormous stalactites hang suspended underneath a sheen of water, giving the whole scene a beautiful, withal a most unreal, appearance.

BRIDAL VEIL FALLS

Such a fall occurred just above the place we camped that evening. Some one, wishing to be entirely original, had named it the "Bridal Veil Falls" (see page 100). At the village above, the walls were 3,000 feet high and about half a mile apart, leaving a fertile bottom to the canyon. At this first fall the walls narrowed until they were scarcely a hundred yards apart at the bottom, the lower walls going up sheer. Large cottonwood trees were scattered over the bottom; ferns and moss clung to the moistened walls, and the wild grape-vine entwined itself over everything within reach. We felt well repaid for our two days of hard work to reach this lovely place; the most beautiful lateral canyon of all those that enter into the Grand Canyon.

It had been a fatiguing journey to reach this camp, which would be our headquarters for the next few days. Feed for the animals had been scarce, and the one little spring of water found at the head of the trail above the village was disgusting. "Topocobie," the Indians call it, the equivalent of "bad water," which it certainly was. Even the burros sniffed suspiciously at it. The half-decayed carcass of a horse, which had been shoved off the trail above, did not add to the general beauty of the locality.

Our camp here at the bottom was all the more enjoyable for this reason. The burros were now in clover, or at least in grass, up to their knees. Also they were sure of a three or four days' rest, for they could not be taken any farther, and it was up to us to do the hard work. The Indian agent had given us the keys to some buildings at this place, telling us that we could safely store our belongings therein while we were absent.

Our material was placed inside, but we preferred to sleep outside on the dry ground.

PHOTOGRAPHING AN INDIAN

Early the next morning Captain Burro dropped in for his promised sugar, and any other little gratuity we should care to add. We bribed him to pose for us while we made a photograph; but his typical Indian face, aged and wrinkled, was spoiled by a dirty and dilapidated costume of "civilized clothes." On a similar occasion, several years later, on his offering to allow us to make his picture, we informed him that we did not care for an Indian in a white man's garb—that we wanted him in Indian clothes such as he used to wear long ago. He was on hand the next morning, ready for the picture. The clothes were hardly as elaborate as one might have expected, but he had a splendid physique, in spite of his great age, and he earned the dollar we paid him for posing. It was a chilly September morn, and the mist rising from the falls gave him an uncomfortable shower bath (see page 100).

The remainder of this first day was spent in exploring the wonders near at hand. A deep inner canyon entered on the right of the falls, with walls about 300 feet high, very narrow, and straight as a well. It is reported that the Indians formerly cremated their dead, together with all their belongings, on the cliff above, then threw their ashes into this canyon. Numerous tunnels and prospect holes were bored into its sides. Many years before great quantities of lead and silver ore had been mined and packed out of this place. In more recent years another company was organized to prospect the canyon for platinum. This company built the houses we had entered the night before.

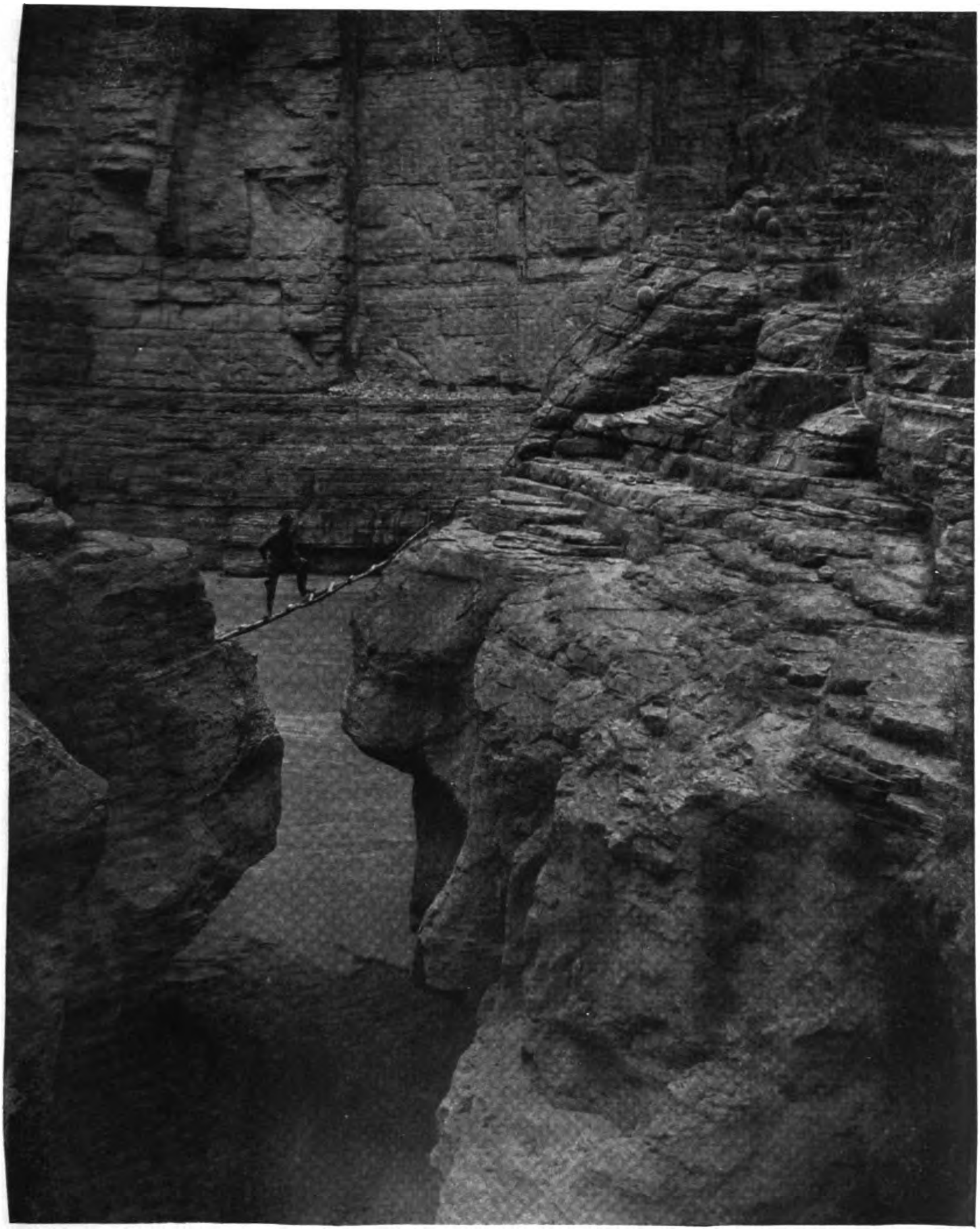


Photo by Kolb Brothers

LOOKING ACROSS THE COLORADO RIVER FROM THE MOUTH OF HAVASU CANYON: CATARACT CREEK

The high water of the river has dammed the smaller stream into a long, deep pool. The line of division between the muddy and clear water can be plainly seen in the picture (see text, page 127). Note the barrel cacti growing on the rocks in the upper right-hand corner.

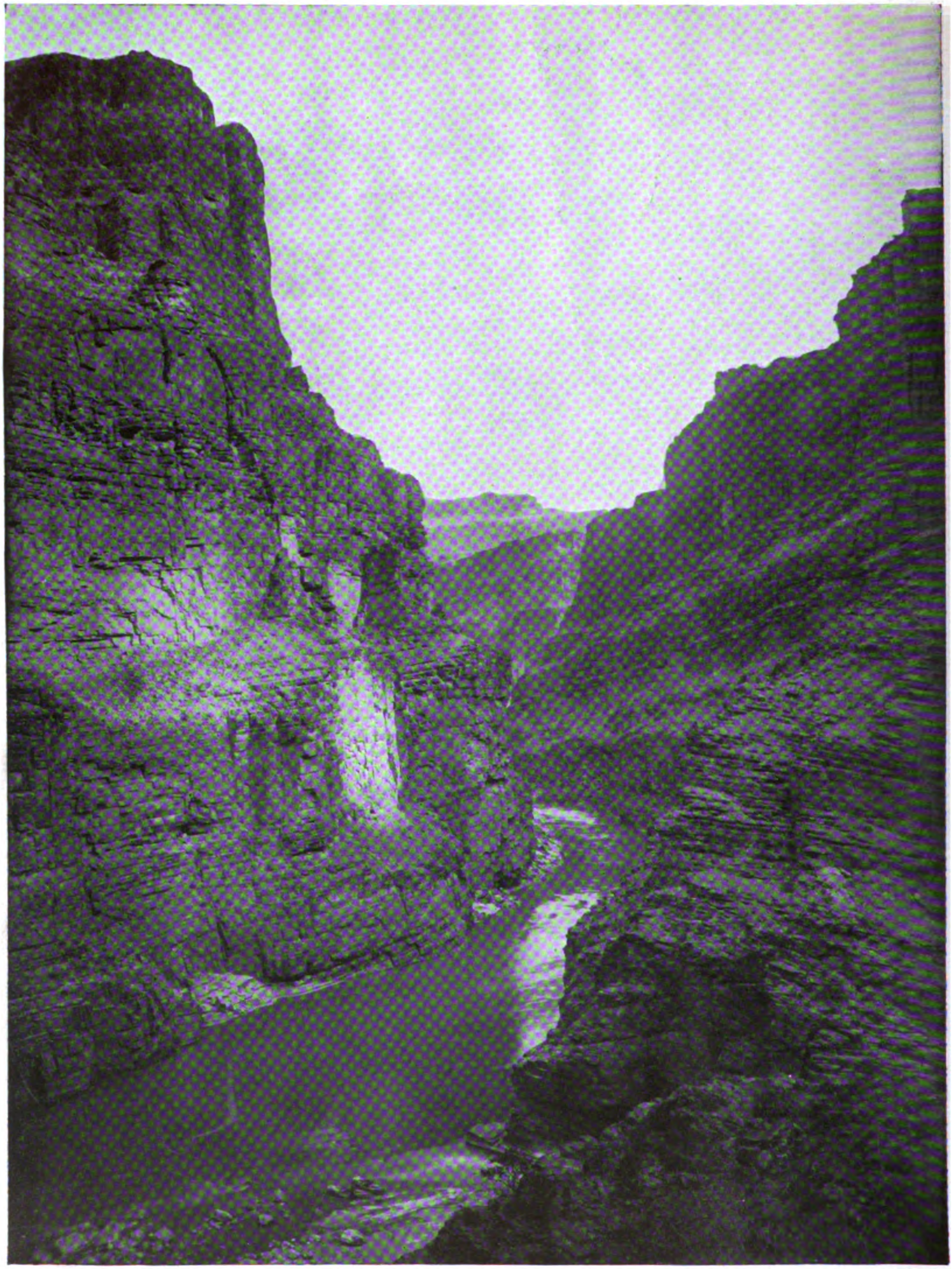


Photo by Kolb Brothers

THE MOUTH OF HAVASU OR CATARACT CREEK AT LOW WATER

Note boats at the river's edge. Taken on the river voyage during a low stage of water. Compare this view with that of the same point when the floods fill the banks, shown on the following page.

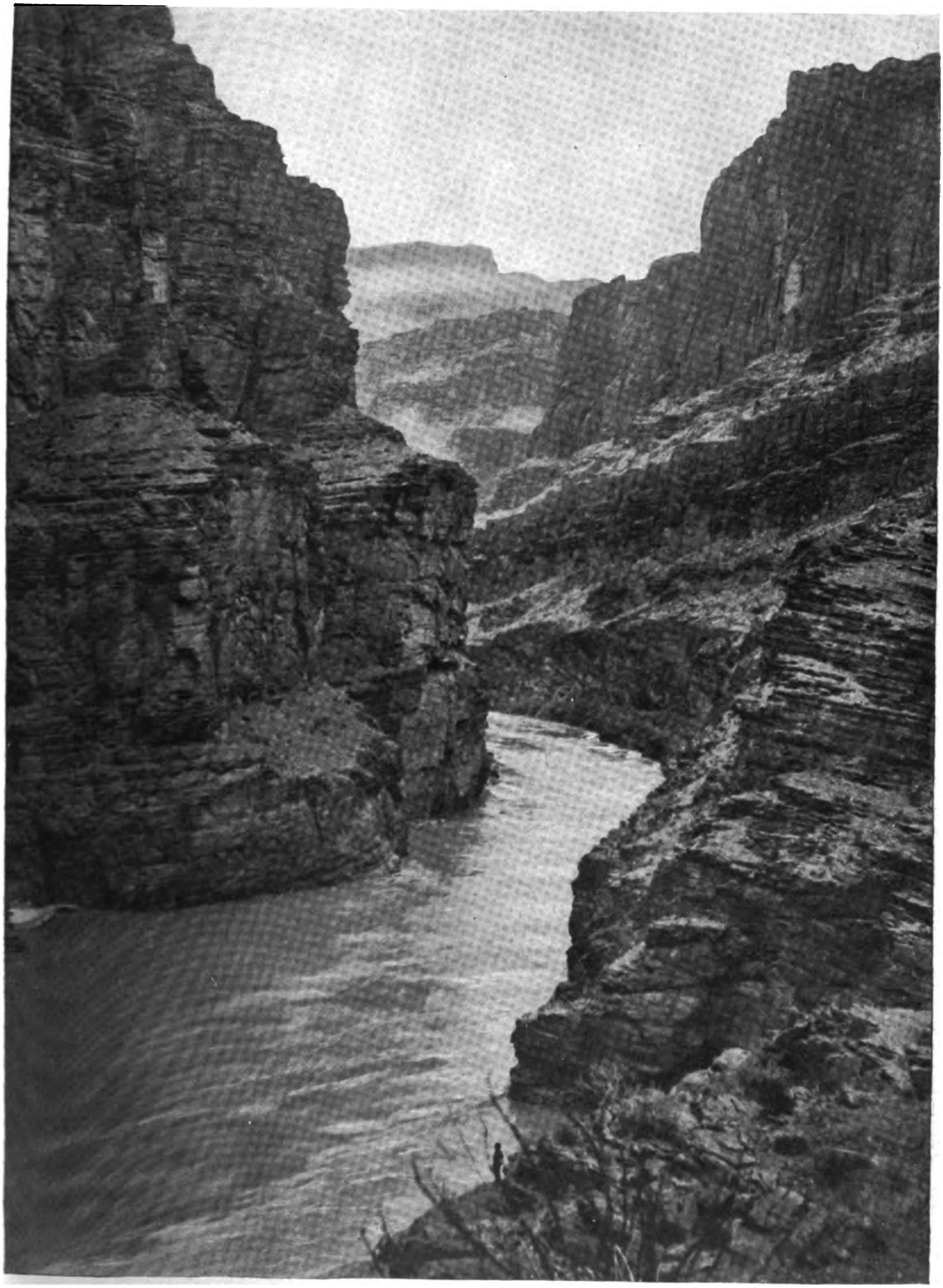
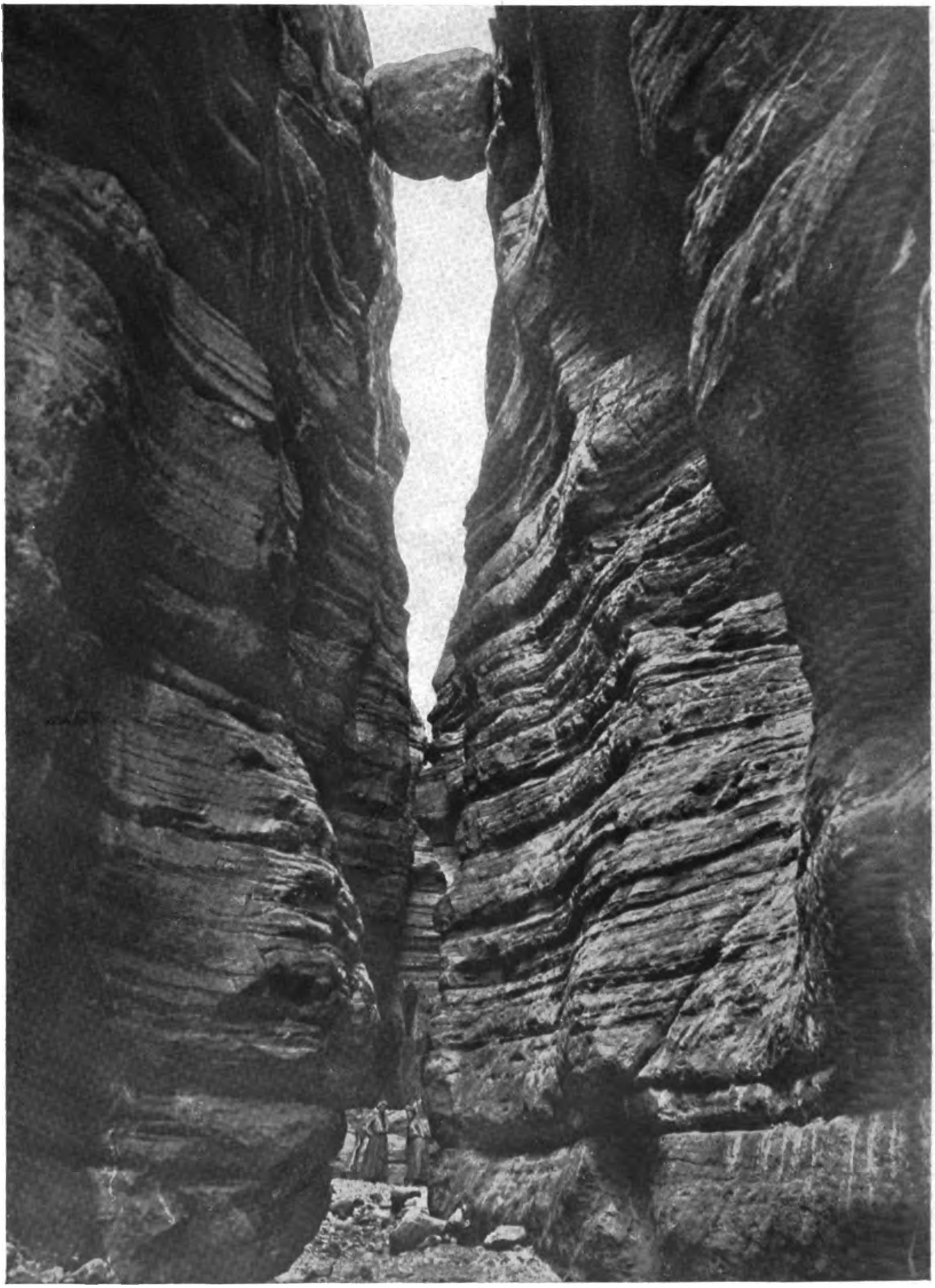


Photo by courtesy of the American Magazine

MOUTH OF HAVASU OR CATARACT CREEK AT THE JUNCTION WITH THE COLORADO RIVER AT HIGH WATER

Note the figure of a man on shore. This picture was taken during the flood stage on the Colorado and shows the water 60 feet higher than in the preceding picture. The walls in the distance are 4,500 feet high; those in the foreground are over 2,000 feet high. There would have been small chance for escape by climbing up such walls as these if our boats had been lost or injured beyond repair.



THE WEDGED ROCK

Photo by Kolb Brothers

Found on the Bass trail on the north side of the Grand Canyon. The boulder has become loosened from the slopes far above, rolled down and lodged in the narrow gorge. Others of a similar nature are found within a few minutes' walk of this spot. Note human figures (see text, page 115).

A DANGEROUS WATERFALL

A mile down the canyon was another fall, even higher than the first, being credited with a drop of over 180 feet (see page 101). It was 30 feet wide, the water going over in a solid wall, not spreading, as did the upper fall. The first party of miners met with a fatality here, one of their number, Mooney by name, losing his life by the breaking of a rope with which he was being lowered to the bottom of the falls. The mining company had provided a passage around the falls in a spectacular manner. A sloping cave in the travertine, or deposited mineral, had been enlarged, and a winding stairway was hewn out of its sides. In two places an opening had been made in the sides, allowing a view of the falls. These openings were spacious, and compared well with a box in a theater. Large stalactites hung pendant from the walls, and gave the whole scene an enchanting appearance.

A short distance below the fall an iron ladder was erected 200 feet up the side of the wall, leading to a cave, which had been enlarged by the miners. It was held by spikes inserted into holes drilled into the walls, then wedged with wooden pegs. We had a creepy feeling when one of these allowed the ladder to swing outward a few inches as we climbed it.

THE INDIAN AT HOME

We visited the Indians' homes where we thought we were welcome. Their houses were merely a few logs leaning together, overlaid with willows, and with a covering of red earth over all. We saw a few fig trees and many apricot and peach trees. Some of the latter were in bloom, for this was the month of May. At one place we found a very old blind squaw, alone except for her dogs. She was busily engaged in carrying some corn from one building to another, guiding herself with a rope tied between the two structures.

Several years after this visit a cloudburst at the head of the canyon caused a number of storage dams to give way, the waters sweeping down through the unfortunate village. This helpless old woman was drowned, and nearly every house in the place was washed away. This fact is merely noted in passing, because it gives some idea of the violence of the storms which sometimes occur in this country.

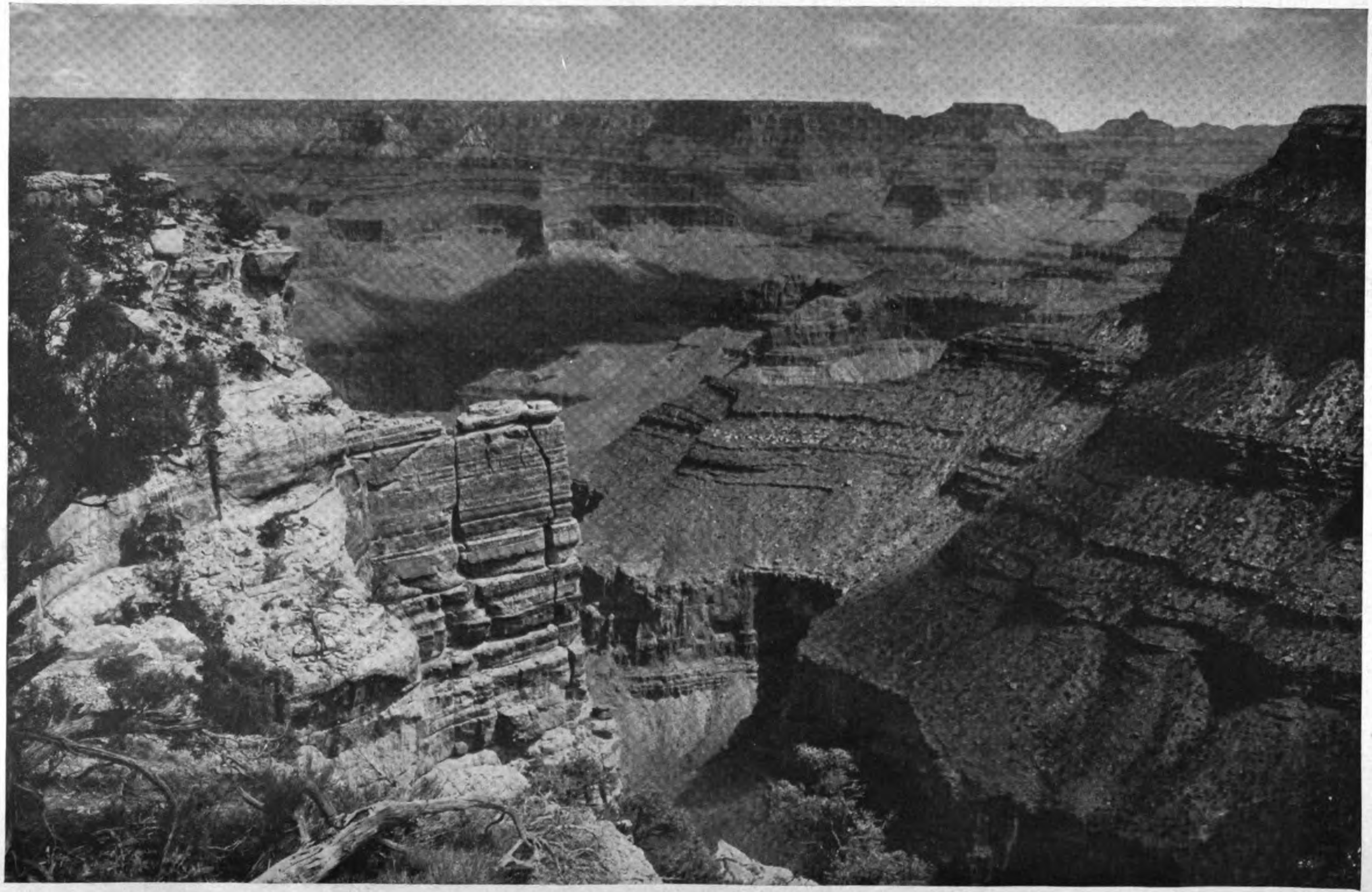
The following day we prepared for the hard trip to the river, 6 miles below our camp. First we loaded our plate-holders, using one of the tunnels for a dark room. We have seldom had a better one. Then, with our cameras, food, and equipment packed on our backs, we set off down the canyon. As we descended, the walls grew higher and closer together; the stream had increased in volume until it was more like a small but turbulent river; the foliage everywhere blocked our path. We had to cross the stream several times. At times we would attempt to walk on the mineral deposit. Often this would crumble under our feet, and we would be plunged into the deeper water, our cameras being saved by holding them above our heads.

After about five miles of such traveling, the lower walls, which were about 200 feet high at our camp, now towered above us to a height of 2,000 feet; then they sloped back and up again to a total height of 4,500 feet. When we finally reached the river (see page 104) we found that much the same condition obtained there, the walls directly above the river being almost sheer for 2,500 feet, with only a ledge or two to break their sides (see pages 104 and 105). We afterwards discovered the trails of mountain sheep on these ledges.

DETERMINING AVENUES OF ESCAPE

In all our excursions to distant parts of the Grand Canyon we always endeavored to reach the river and locate these possible avenues of escape from it, for some day we intended to descend the stream in boats, as Major Powell had done in 1869-'71, and our knowledge of these places might prove to be valuable.

We were two weary but happy travelers when we dragged our feet into camp that night. The distance traveled was scarcely more than 12 miles; but it was 12 miles of tangled grape-vines, fallen boulders, and cataracts—about as much as an



THE GRAND CANYON AS IT APPEARS ON A CLEAR DAY (SEE ALSO TEXT, PAGE 115)

Photo by Kolb Brothers

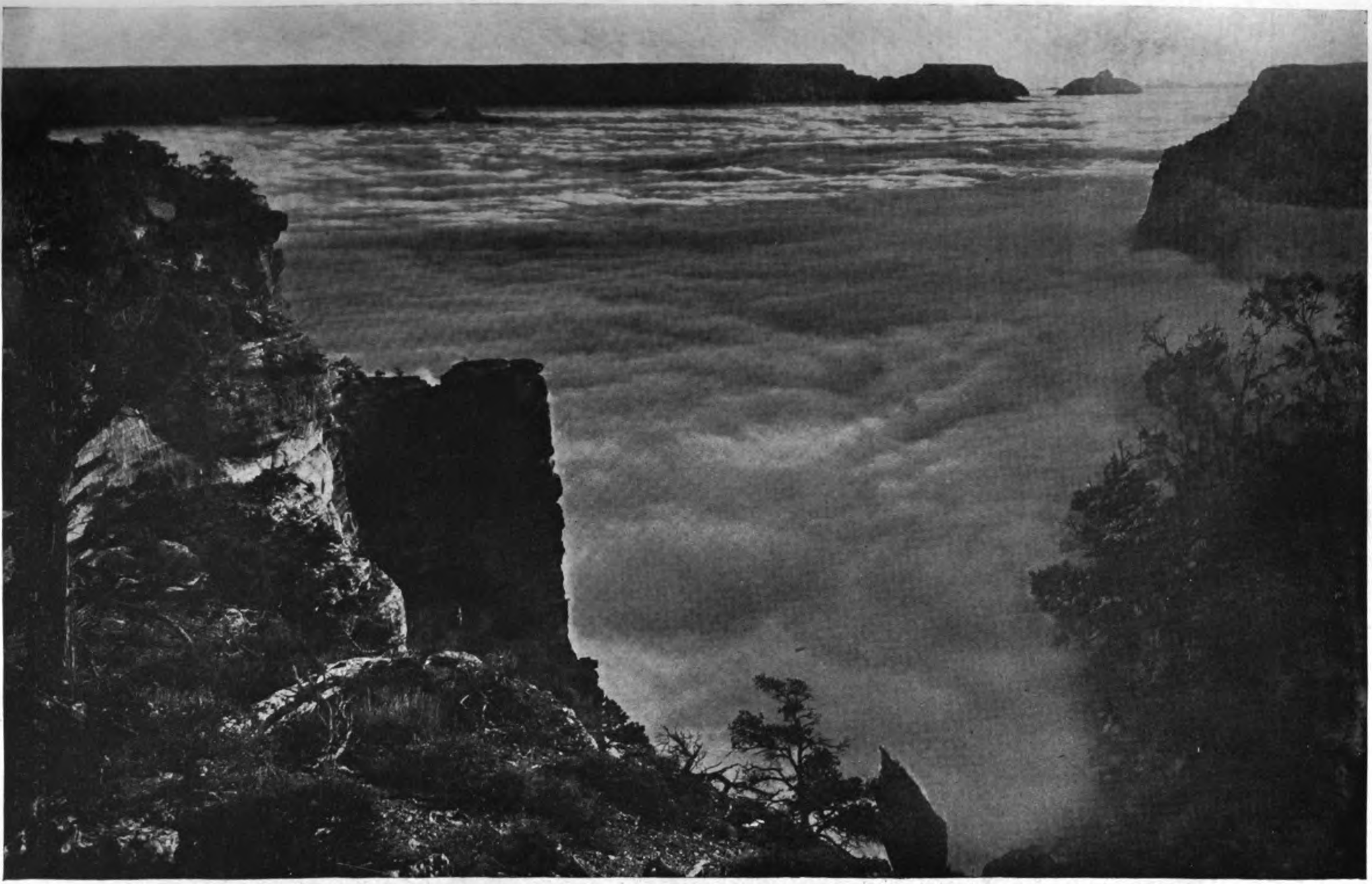


Photo by Kolb Brothers

THE GRAND CANYON FILLED WITH CLOUDS

This photograph was taken from the same point as the preceding picture

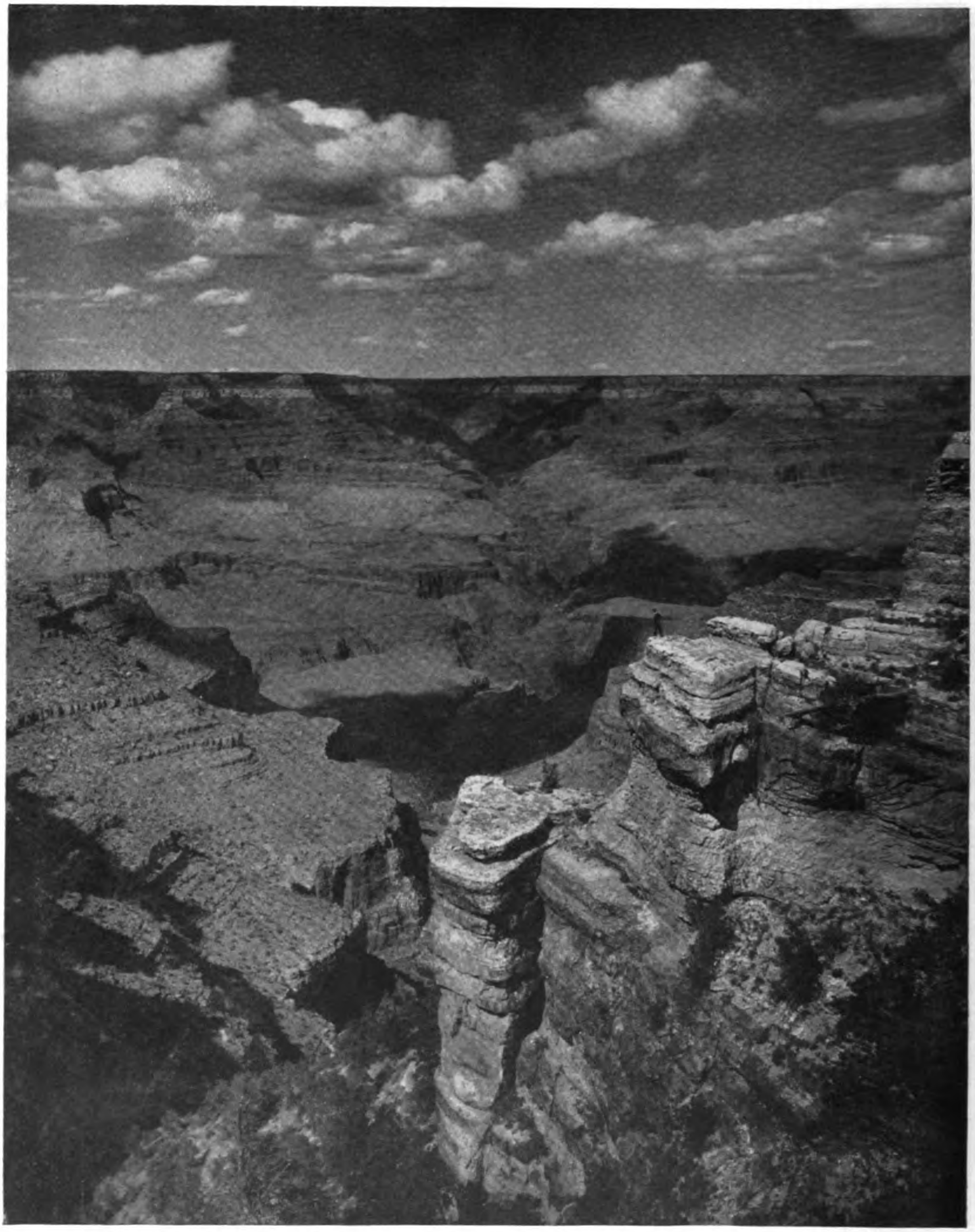


Photo by Kolb Brothers

THE GRAND CANYON FROM THE FOSSIL ROCKS

Note the tents, the white dots, just above the central rock, below shadow, are about 3,500 feet below the rim

Photo by Kolb Brothers

THE SAME VIEW OF THE GRAND CANYON FROM THE FOSSIL ROCKS WITH A MANTLE OF SNOW AND CLOUDS

Photo by Kolb Brothers

LOOKING DOWN INTO THE GRAND CANYON FROM THE HEAD OF BRIGHT ANGEL TRAIL

Clouds hanging below the rim. No snow below the 2,000-foot mark. Bright Angel Creek Canyon in the center

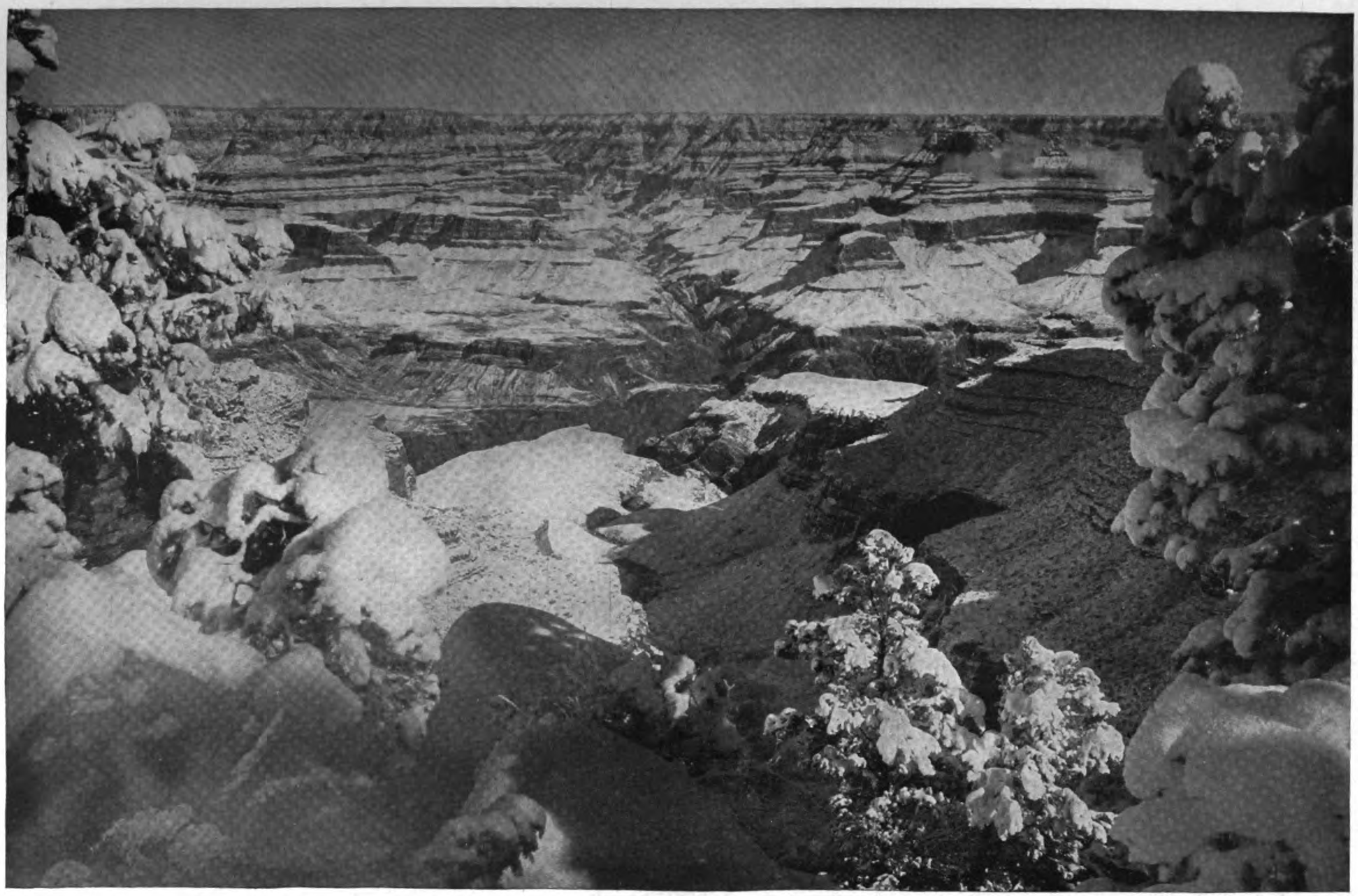


Photo by Kolb Brothers

ANOTHER VIEW OF THE GRAND CANYON FROM THE SAME POINT AS THE PRECEDING PICTURE

Snow has descended to the plateau. Clouds have lifted from the canyon. Bright Angel Creek Canyon in the center

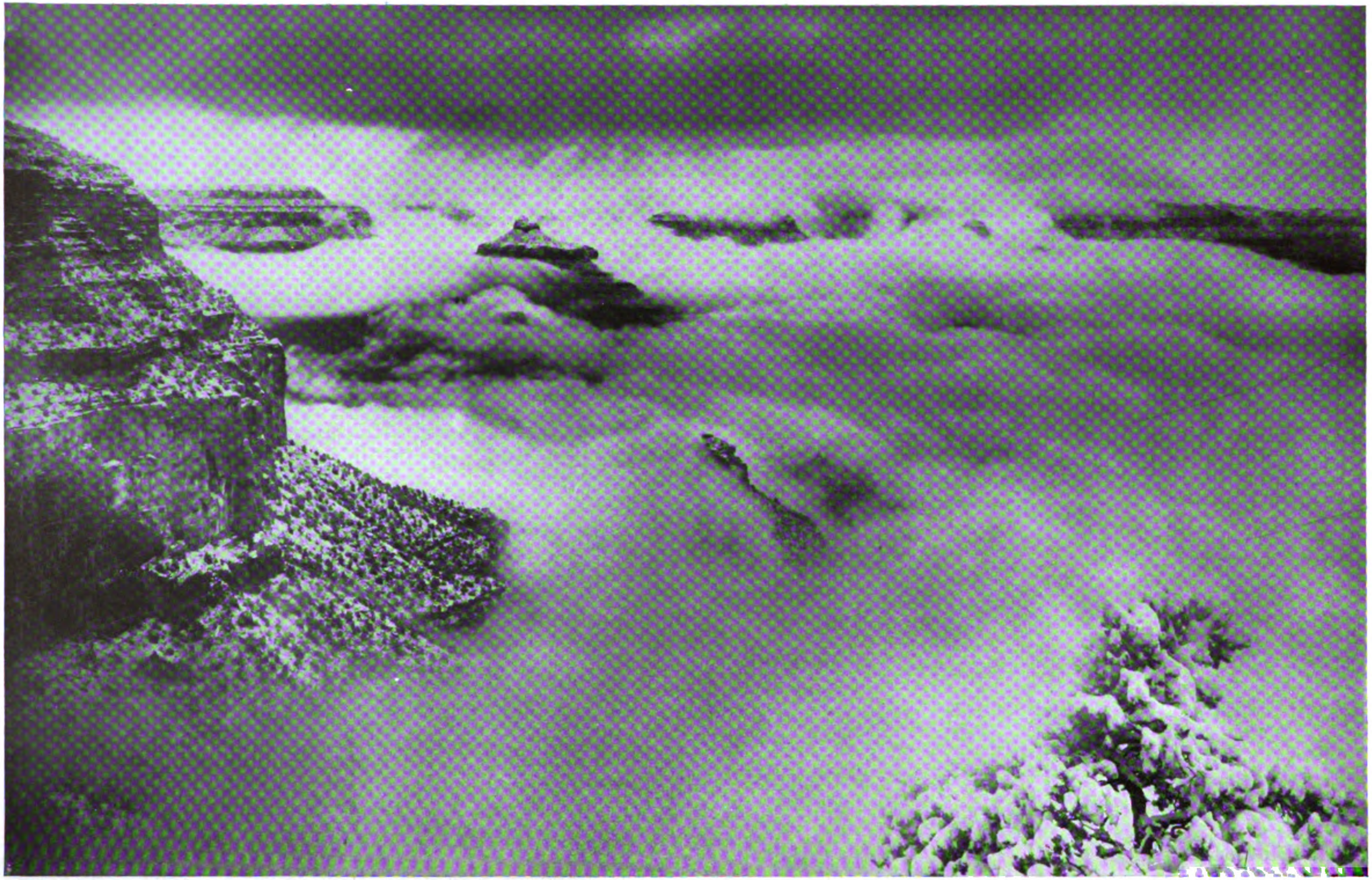


Photo by Kolb Brothers

SNOW AND CLOUDS IN THE GRAND CANYON: FROM THE STUDIO

With the battleship *Iowa* nearly obscured. Compare this picture with those on pages 116 and 117; all three views are from the same point ordinary person would care to tackle in one day.

NO ROYAL ROAD

There is no royal road for the person who would explore the canyon's hidden secrets. Enthusiasm in unlimited quantities is a most needful qualification—enthusiasm in spite of discomfort, fatigue, and toil all to gain what may be a doubtful goal. Looking back over our 12 years of experience at our work, we do not remember having ever made an easy trip in the canyons, unless we counted those made down the Bright Angel trail, beside our home, and we do not count those, for they can easily be done in one day.

After having satisfied ourselves with the beauties of Havasu (Cataract Creek), we prepared to return. We left the agency about noon. A cold wind was blowing up the canyon and it was raining a little. On top we could see that it was snow instead of rain. We had no desire to make the homeward trip through a snow-storm, as we were ill prepared for cold weather at that time of the year.

By the time we had climbed the 15 miles of trail it was quite dark, and 5 or 6 inches of snow, very wet and heavy, had fallen. The burros would have all the water they needed this trip. We imagined that if we could get away from the rim—as the canyon's edge is usually termed—that we might get out of the storm belt, for often these storms hover over the gorge and spread back but a short distance. It was 10 p. m. when we stopped—we could hardly say camped. The snow did thin out some, but still there was plenty, and the ground was very wet. We had been enjoying a month of fine weather previous to this trip, and a snowstorm that late in the season was entirely unexpected. There were no sheltering rocks; our two blankets made a very poor bed, and we slept but little that night.

On the following day, were it not for the storm we might have made a detour to the Bass, or Mystic Springs, trail, as we did on a later occasion. Three or four miles up this trail, which is one of the wonderful parts of the canyon, a great boulder, loosened from above, has fallen into a side canyon and lodged there close to the top (see page 106)—just one of the many things that go to make this section of the country something entirely out of the ordinary.

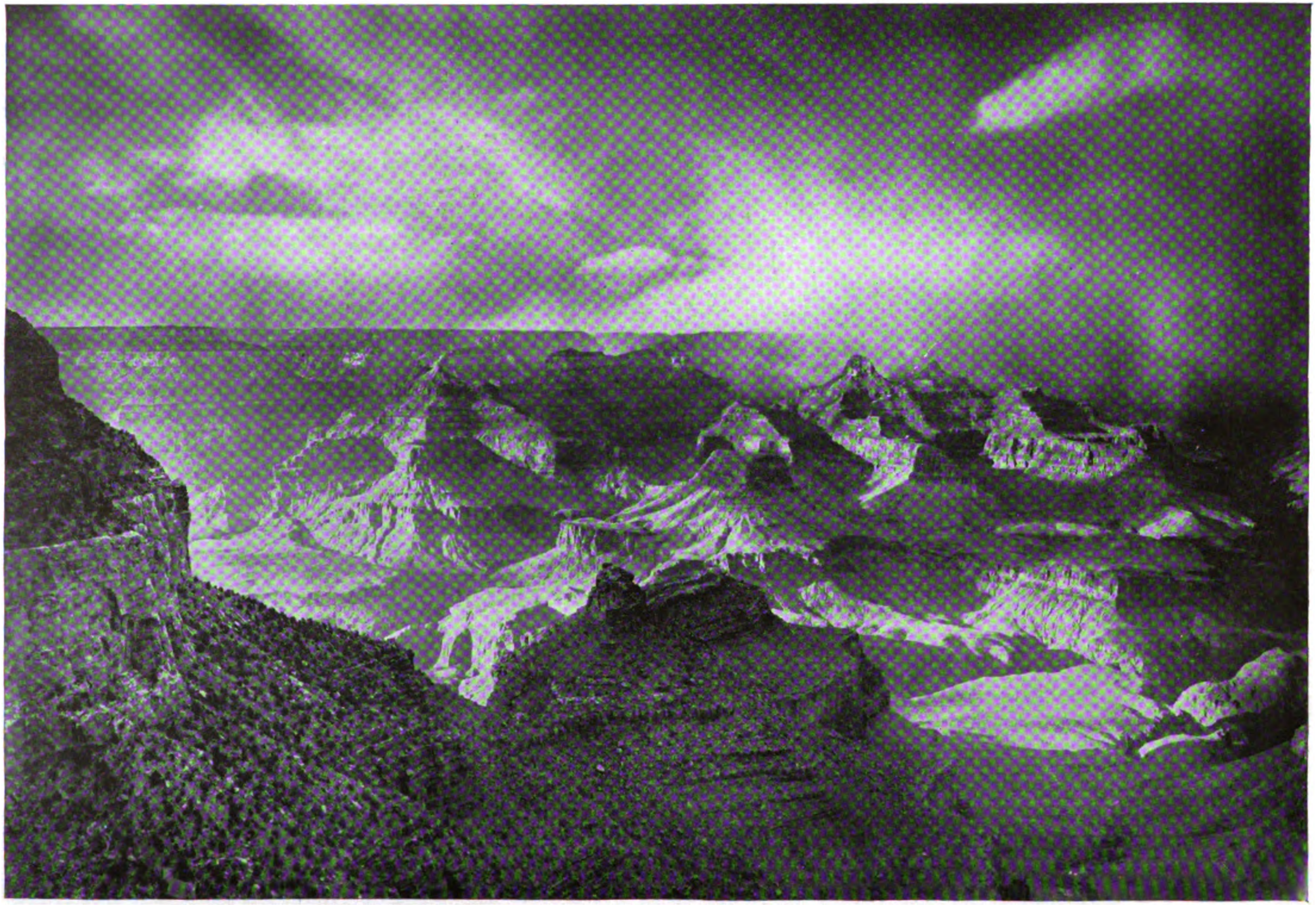
STORM AND ATMOSPHERIC EFFECTS IN THE GRAND CANYON

We walked most of the 30 miles covered the next day, for the roads were slippery and difficult for the animals; also it was the only way we could keep warm. It was nearly midnight when we reached home and hurriedly pulled the packs from the burros.

The pleasurable thrills we experienced the following day when we developed our plates more than made up for any discomfort we may have experienced. More than that, the great amount of moisture in the atmosphere had formed into clouds which collected in the canyon a thousand feet below the rim, filling it from bank to bank. It was a rare and wonderful sight. The rising sun tinting the tops of the billows made it look not unlike the whirlpool of Niagara, but on an immense scale. These clouds hung in a layer or stratum about 400 feet thick; above the clouds everything dazzled in the sunlight; underneath it was a cloudy day. About noon the clouds became heated; they rose and disappeared, collecting again on the following night (see pages 109 and 114).

These storm and cloud effects of the spring form some of the most interesting phases under which the canyon can be seen. A few hours after the sun comes up every vestige of the snow has disappeared; in two or three days the clouds lift and vanish, leaving a clear, blue sky, destitute of every vestige of a cloud. Even in midwinter much the same condition holds true.

It is not often that the snow descends below the inner plateau, as it is changed to rain as it drops to the lower altitudes. On rare occasions it has fallen to the river itself. The nights at such times are quite cold on top, the thermometer tarrying somewhere near the zero mark.



STORM ON THE NORTH SIDE, WITH SUNSHINE IN THE CANYON Photo by Kolb Brothers

The small white spots in lower right corner are tents, 3,200 feet below. The nearest point on the opposite rim is 8½ miles distant (see also pictures on pages 114 and 117)

AN ELECTRICAL STORM AT NIGHT IN THE GRAND CANYON

Photo by Kolb Brothers

The pictures on pages 114 and 116 are all of the same peaks, seen under different atmospheric conditions

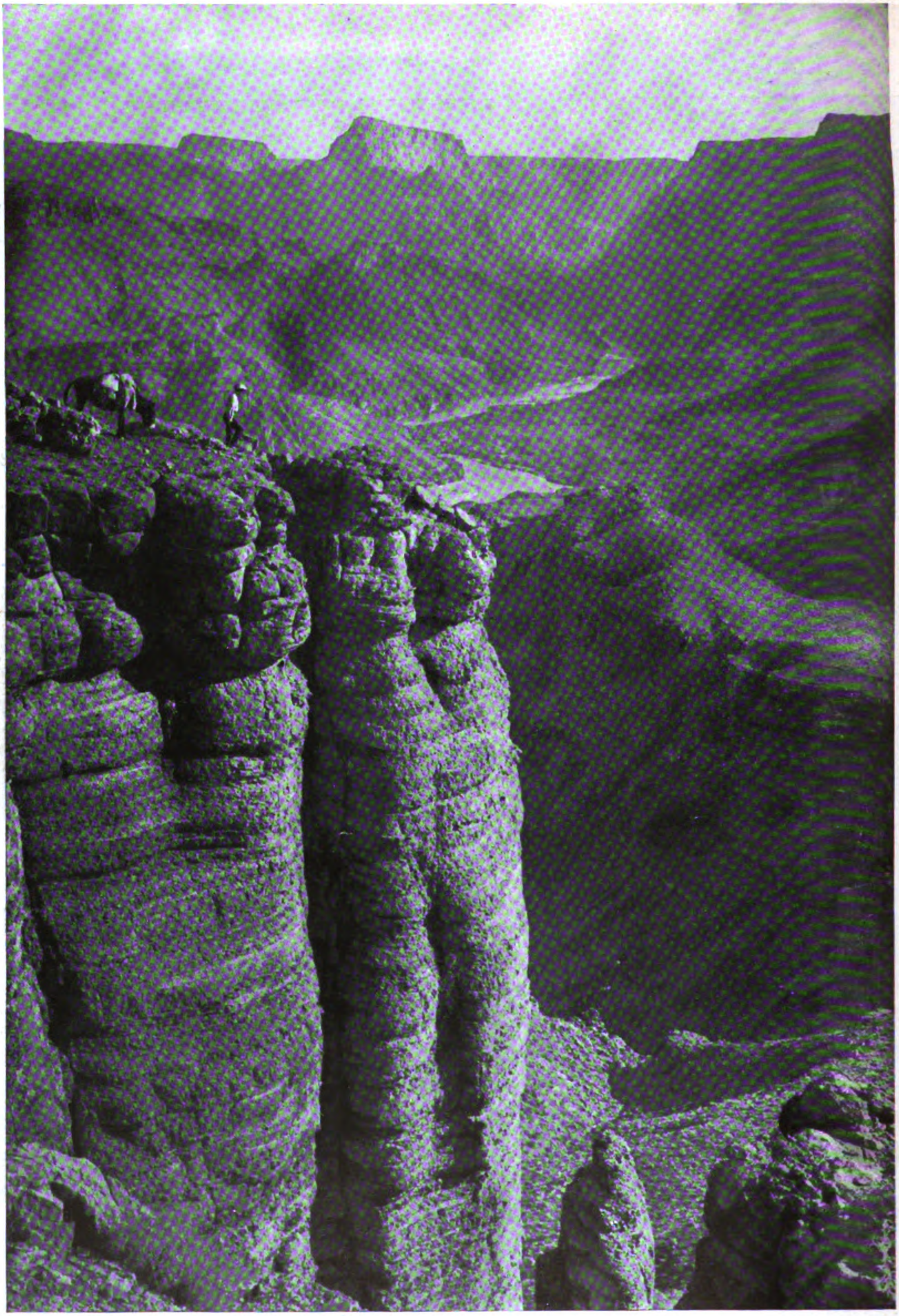


Photo by Kolb Brothers

ON THE TANNER TRAIL, AT THE BOTTOM OF THE BLUE LIMESTONE OR MARBLE WALL (SEE TEXT, PAGE 124)

The canyon is just as beautiful as before, but differently so.

THE EFFECT OF SNOW

The snow hangs in clusters on the trees and bushes; then the rocky walls and the peaks in the canyon change their coats of many colors for a robe of purest white. Every hint of mist or haze disappears from the gorge below. The distant views of the mountains and canyon walls, ever deceptive in this rarefied atmosphere, are brought unbelievably near; the opposite wall of the canyon, although many miles away, looms directly before us (see pages 112 and 113). All is quiet and impressive; a junco flits across our path; a nut hatch taps on cedar or piñon, but beyond that there is no suggestion of life or motion.

Equally as interesting, but of an entirely different nature, are the rains of July and August. These storms are quite often local—sharp, quick thunder storms—coming from one cloud; or it may be a cloud-burst a half mile away, while the sun continues to shine in other sections of the canyon. The preparations for these storms are often spectacular. The hour, we will say, is noon, with the sun shining directly against the north wall—the most uninteresting time of the day. The sky is cloudless—an infinite space of deepest blue; the heat-waves shimmer from the rocks.

Suddenly from below the horizon a round, white cloud pops up. Pops is the right word, for a minute ago it was not there. It is not part of the sky behind it, but hangs suspended like a great balloon, or a circle of white mosaic against a blue background. Others then appear, these last being shoved up by a great thunder-cap, snowy white above, black and forbidding beneath.

Then, like a flying squadron these clouds go sailing across the sky. Other clouds have appeared from nowhere in particular; they merge and spread, darkening and drifting over to the north (see page 116).

There they rest, for the north side is from 1,000 to 1,400 feet higher than our 7,000 feet elevation, and they seem to have reached their destination.

THE STORM KING REIGNS

A boom of distant thunder rolls up the canyon, losing itself in the many side gorges. A little feathery rain breaks from one end of the clouds, but rises again in mist before it reaches the lower altitudes. Jagged streaks of lightning pour from the clouds and the storm spreads. Thunder crashes as though the cliffs themselves were falling, the echos continuing to reverberate long afterward. Then the rain begins in earnest.

In a half hour the walls are deluged and angry; red-colored streams run off their sides. Waterfalls, the color of blood, pour from the plateau into the river over a thousand feet below. A glance through the telescope reveals a mad, foaming torrent hurling logs down the beautiful Bright Angel Creek of an hour previous.

In a short time the storm has passed, to break out anew in some other spot. The sun, even if it has been obscured temporarily, now comes out again. Rainbows appear double, and even triple in the gorge beneath. The moisture rises in the form of vapor; collects in a cloud which hugs the higher peaks, or drifts in long strings when they strike the cooler air strata.

An Arizona electrical storm at night is a sight long to be remembered. Our little studio is so favorably located that we look into the very depths of the gorge, and can view these effects without being exposed to their fury. Many times we have worked from our veranda, exposing plate after plate in trying to record the electrical flashes. They are often disappointing; sometimes the flash will divide the plate entirely in two, beginning and ending out of the range of the plate or on either side of the angle of the lens. We also find that a single flash seldom brings out the formations in the canyon as we want them to show in the printed picture. Our most successful pictures have been made by exposing the plate about one minute, thereby getting the benefit of the flashes of heat lightning as well as those of the stronger electrical flashes, the two combined giving us the illumination we want (see page 117).

The account of our trip to Cataract Canyon, briefly detailed, gives an idea of our methods of reaching the little-visited portions of the canyon. We usually use burros in preference to the faster animals, because they are well adapted to the photographer's needs. We nearly always walk, but if we do ride or drive it is only on the level roads away from the canyon edge. The burro is quite easy to care for in sections where there is little feed; they get along on very little water, and our photographic material comes home in much better condition than when packed on a horse or mule.

When any climbing has to be done, the burros are hobbled in the best grass available and are left to shift for themselves until we return. If this happens to be on the inner plateau, we often find that they have made the acquaintance of wild burros, hundreds of which have their homes in the Grand Canyon. These wild burros are descended from a few which gained their freedom from some of the prospectors who were in this region twenty years or more ago.

OLD PROSPECTORS' TRAILS

At this point we might also remark that all completed trails leading to the bottom of the Grand Canyon were originally constructed by these same prospectors, or miners. They led to places that gave promise of developing into valuable mineral properties. In a few cases the miners realized something from their experimental work; in other cases they were doomed to disappointment.

When travel ceases over a trail it soon washes out, and only a slight trace remains after a few years of neglect. This is true of the French or Tanner trail, the original Hance trail, and in a greater or lesser degree of one or two others.

The one notable exception to this rule is the Cameron or Bright Angel trail, the only trail over which there is any continuous travel. A toll of $1 per animal is charged by the county, which looks after the upkeep of the trail: and as there is a total of 7,000 people yearly who make the journey on muleback, it has been changed and repaired until it is well-nigh perfect. It is so favorably located that it is less than seven miles in length, yet it reaches the river without any alarming grades, such as are usually found on mountainous slopes.

There are signs of ancient Indians at every point where it is possible to scale the sides of the canyon, these natural breaks being separated from each other in nearly every case by many miles of unscalable walls. We have, however, yet to see any evidence of an Indian trail that a horse could be taken over. They did not understand the use of explosives, and no trail to the bottom of the canyon can be made without a liberal and intelligent use of giant powder, aided with pick and shovel. The remnants of these washed-out trails, crude as they are, aid us greatly when we wish to reach the distant and unexplored sections of the canyon and its tributaries.

II

THE CATARACTS OF THE LITTLE COLORADO

THE oldest, least known, and in many ways one of the most interesting of the trails that lead into the great water-hewn chasm is that known as the French, or Tanner, Trail, located about 15 miles below the mouth of the Little Colorado River, which marks the beginning of the Grand Canyon. Just when this trail was first worked, and by whom, it is difficult to state. There is no doubt that it was opened by some of the earliest Mormon pioneers who had settled in the country adjacent to southern Utah previous to the time when John D. Lee took up his residence at Lee's Ferry at the beginning of Marble Canyon, some 65 miles above the canyon of the Little Colorado (see page 121). F. S. Dellenbaugh, in his interesting story of Major Powell's second exploration in 1871, records the fact that they found an abandoned log cabin built close to the river's edge even at that early day. This undoubtedly had been built by some of these adventurous pioneers.

A few miles above is a prominent ledge containing copper and other ores of more or less value, but sufficiently interesting to a mineralogist to induce far-

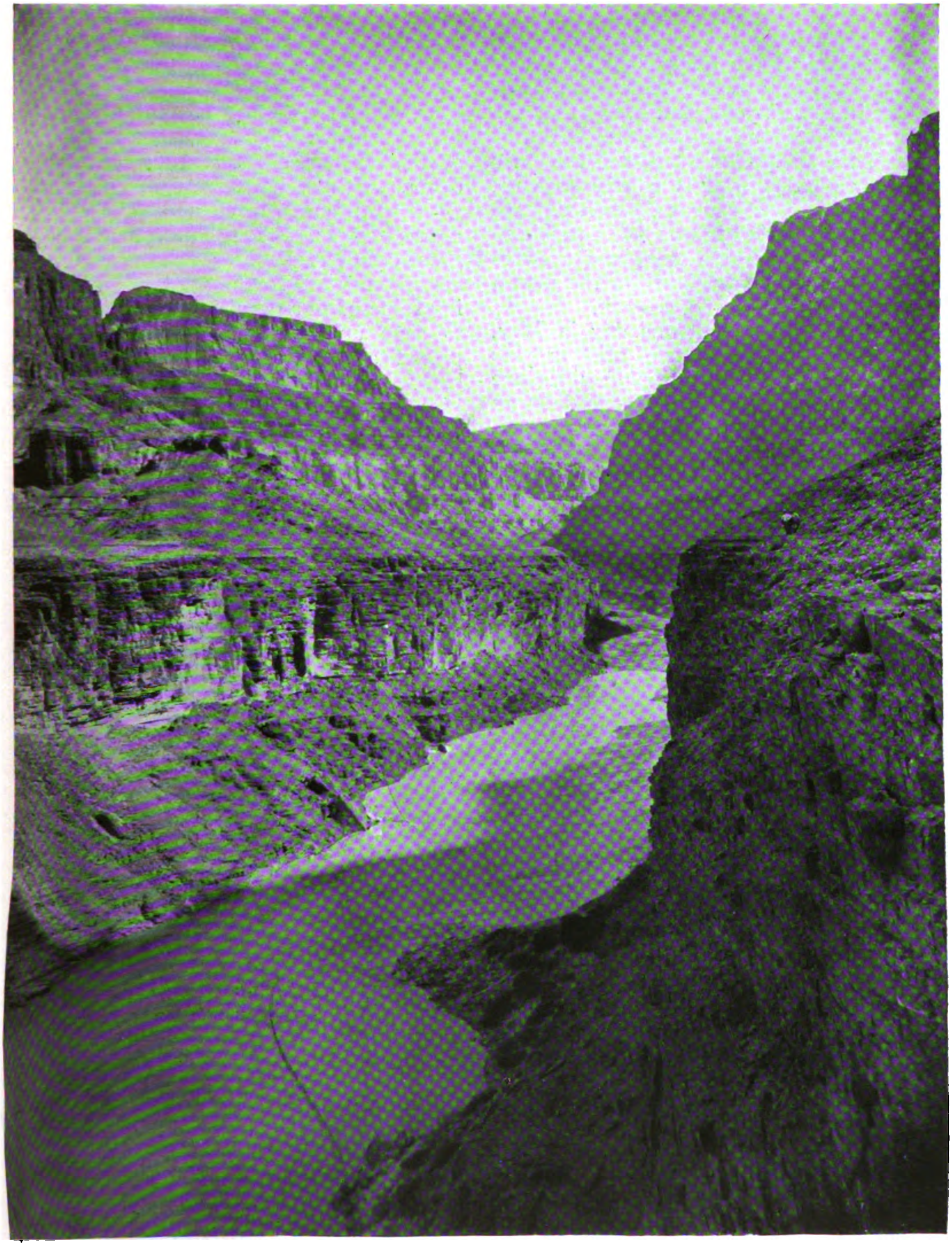


Photo by Kolb Brothers

OUR TRAIL TO THE CATARACTS OF THE LITTLE COLORADO

Note figures of man and burro on top of ledge, which is 400 feet above the river (see text, page 125) ther prospecting. The Mormons have many tales of the nuggets of gold that John D. Lee brought from his hiding place in the canyons, and even today the hunt goes on for this mine, which may or may not exist. Our interest in the early history of this trail is merely passing; what did interest us was the fact that we had been told that it was still possible to get animals over the trail, and even to follow up the gorge itself to the mouth of the Little Colorado.

So thither we went one day in May, for we had heard rumors of photographic possibilities in that section; besides, we needed a change, and we always look on these journeys, hard as they usually are, in the light of a vacation.

VIEWED FROM THE CANYON EDGE

Before descending the trail we skirted the edge of the canyon to a vantage point known as Desert View. What a stupendous view it was! Owing to a bend in the gorge, there is more of the Grand Canyon visible from this point than from any other single view.

Far to the west we could see the top of the canyon wall where it makes its northern turn close to Havasu Canyon. Seventy miles of river lay coiled up in that one view, yet so fully was it hidden that we only caught a glimpse or two directly in front of us. Still beyond that farthest wall were the volcanic cones of Mt. Trumbull, Mt. Dellenbaugh, and others. Directly across the canyon was Cape Final, the extreme end of Greenland Point, that 20-mile-long peninsula which extends into the canyon from the north. To our right we could look into the very mouth of the Grand Canyon, and on past into Marble Canyon as well. Over to the southeast, and considerably below us, stretched the Painted Desert, brighter in color than the canyon itself, slashed through with the deep, narrow gorge of the Little Colorado. Beyond that stretched the Vermilion Cliffs, the wonderful fault or fold which crosses the Colorado River—visible from this point even to the head of Marble Canyon—while farther yet, 120 miles away, Navajo Mountain raised its rounded dome above the desert. The Coconino forest to the south ended only when the San Francisco peaks hid them from view.

The mere cataloguing of figures, however, gives no idea of the canyon. No description will make another see the subtle, elusive colors, as they shift and change with each hour of the day: no word picture will make another feel the dizzy heights, the sublimity, and the grandeur of it all.

On returning to the trail, after caching some of our provisions under a rock to save unnecessary packing, we each placed a 25-pound pack on our own backs, and with our bedding and provisions on Jennie, we set off down the trail. The upper wall of limestone, seldom very precipitous, was soon above us; the cross-bedded sandstone, which usually presents an unbroken face over 400 feet high, was broken here, so that it was no more difficult than the wall above it.

ROCK FORMATIONS

The rock formations in all parts of the Grand Canyon down to the inner plateau are almost identical. The two formations already mentioned have an approximate width of 1,000 feet, the upper slope being covered with scrubby trees, cedar, and piñon pine wherever they can find a footing. These walls vary in color from a chalky white to a rich cream or buff. Next in order comes the red sandstone, a sloping wall of rock over 1,000 feet in thickness. This wall is seldom very difficult to climb.

Of similar color on the surface is the next drop, a sheer wall of limestone, about 700 feet thick, and the hardest formation in the canyon. The red color in this limestone is only a stain from the sandstone above, and when broken it has a light-blue tint. Major Powell called this the marble wall, for he found it changed to marble in certain sections of the canyon which bears that name. This wall and the cross-bedded sandstone above are the two formations which present a problem to the climber or trail builder. In nearly every case where there is a trail the builders have taken advantage of a fault or displacement of rock; but these faults are few and widely separated.

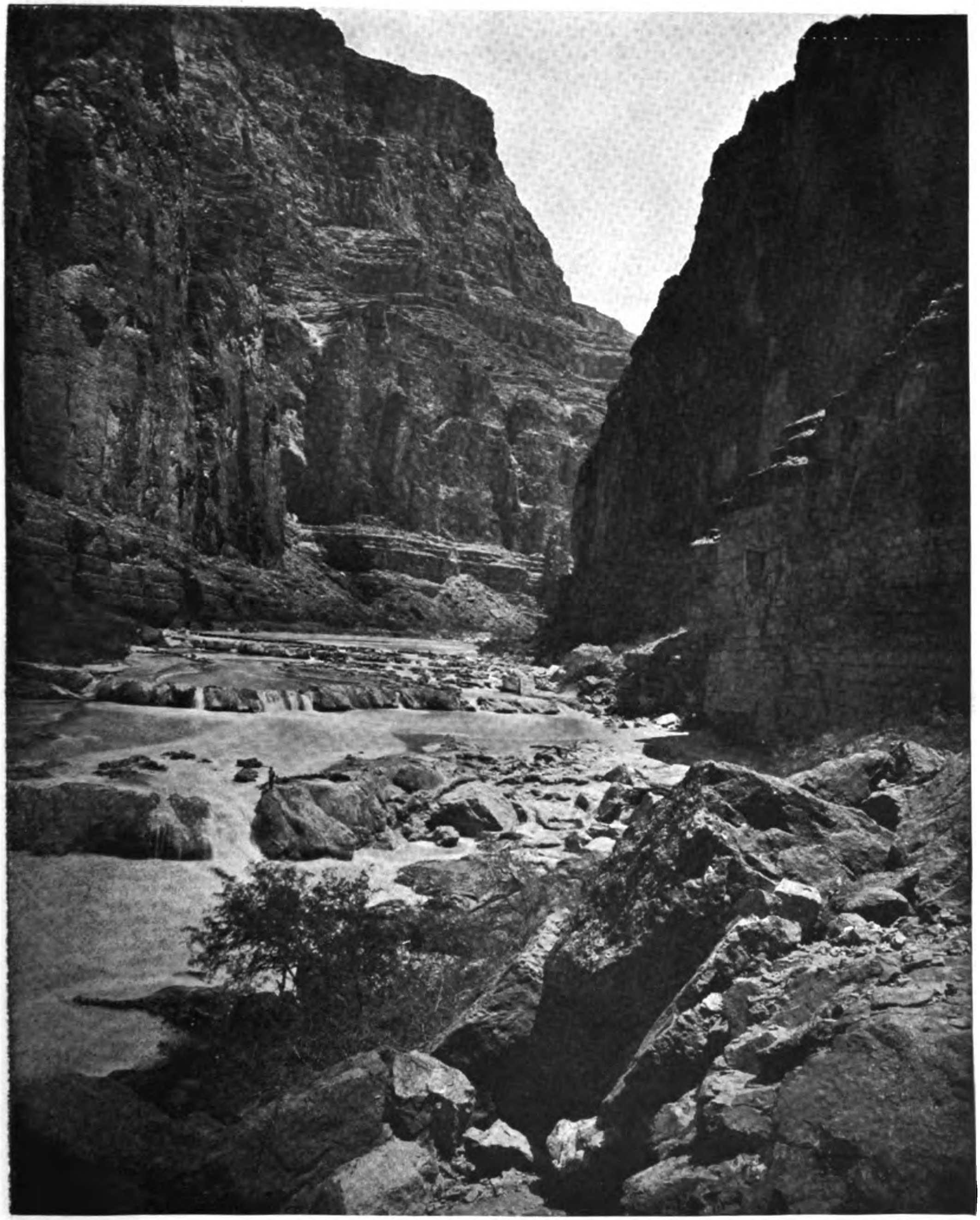


Photo by Kolb Brothers

THE CATARACTS OF THE LITTLE COLORADO

The figure of a man by the last drop gives an idea of their height (see text, page 120)

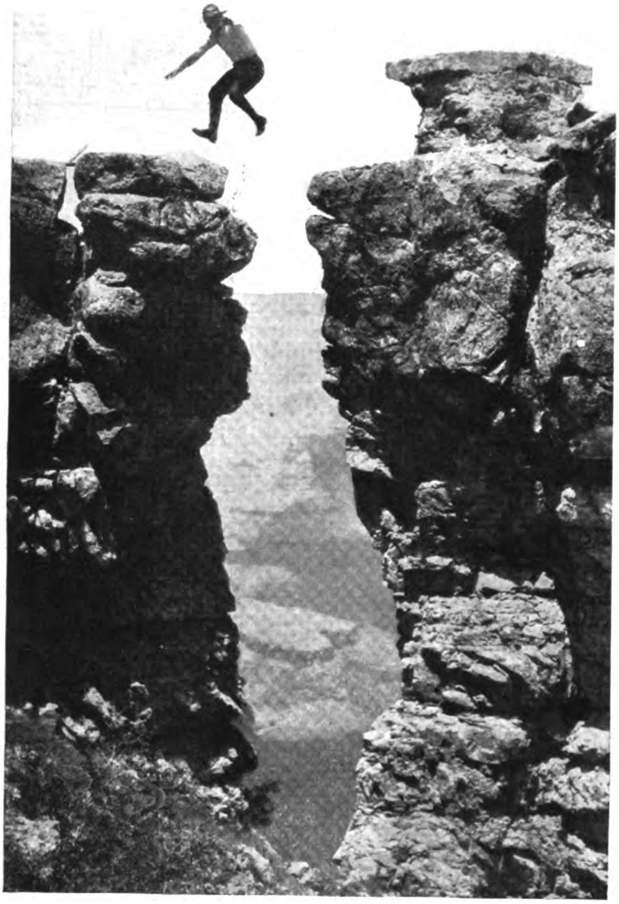


Photo by Kolb Brothers

A LEAP IN THE INTEREST OF ART: NOT AS DANGEROUS, HOWEVER, AS IT LOOKS

Under the limestone is a bed of soft shales, 500 or 600 feet in thickness, a dark olive green in color, a covering of sage and cactus changing its hue but very little. The inner plateau, of which we have made previous mention, rests on this formation. It varies from one-fourth of a mile to several miles in width, depending on the locality. Nearly all of the temples or peaks in the canyon rise from this base. With the exception of the little strip of canyon adjacent to the Tanner trail (see page 118), any canyon below the shale is quite narrow and very precipitous. This deep, narrow section is known as the Granite Gorge, perhaps the wildest and most forbidding part of the Grand Canyon. All the upper rocks are stratified and almost uniformly level, but this lower gorge is twisted and turned in every direction (see page 131). This granite is capped with a 200-foot wall of sandstone, a hard conglomerate rock which often overhangs the granite; another very difficult formation to pass except where intermittent streams have broken it down.

PAGE FROM A GEOLOGIST'S DIARY

We had neither of these two formations at the Tanner trail, for here was the one notable exception to all this uniformity. Underneath the green shales we find an immense deposit of algonkian, which, we are told, is the earliest form of deposited rock. This section, or page it might be termed, seems to hold more of interest for the geologist than any other portion of this remarkable geologic book.

We had no particular difficulty in making the descent to the river, where we camped for the evening.

On resuming our trip the following morning, we found enough difficult trail to make up for our brief respite. In low water it would have been possible to follow along the river's edge, but the spring flood was on at this time, and that road was blocked. No trail had been constructed above the river on the steep slope; but the numerous wild burros which roamed over this section had worn many little trails which went nowhere in particular, but crossed and recrossed each other in endless confusion. One of us would go ahead and figure out the best road, then the other would drive the burro up, scrambling and tumbling over the fallen boulders.

After four miles of such traveling we reached an abandoned miners' camp on a level spot below a perpendicular cliff. Directly above the camp an enormous

A MOUNTAIN SHEEP ON THE RIM OF THE CANYON: PHOTOGRAPHED BY A TOURIST

This photograph prompted us to follow his trail over a series of ladders known as the Humming-bird trail (see page 126)

section of the cliff was separated from the main wall and leaned forward, hanging over the camp like the sword of Damocles, ready to fall any minute, so it seemed to us—a most uncomfortable place to camp.

The miners had tunneled into the walls in two or three places on both sides of the river, none of the tunnels being more than a hundred feet in length. A stream issued from each of the tunnels stained with copper and smelling strongly of sulphur. These claims are still held, and a certain amount of development work is done each year by two or three parties from the Utah side.

A TEST OF NERVE

From this point on to the mouth of the Little Colorado we slowly worked our way over one of the worst trails we have ever seen. The walls rose sheer above the river for 300 or 400 feet, then broke for a short distance into a steep slope, boulder strewn and cut up with many gullies. Above this slope was another perpendicular wall (see picture, page 121): 400 feet below roared the river. In two places large boulders all but blocked the trail. The burro, with her light but bulky pack, was very much frightened, and instead of swinging clear of the rocks, as they usually do, would shun the edge and catch the pack on the rocks. Twice she would certainly have gone over but for our assistance. One of us would lead, holding the rope close to the burro's head, while the other stayed behind hanging onto the pack harness, now shoving out a little to keep the pack clear of the obstruction, now pulling with all our might when it would catch and the burro would struggle to free herself.

All this time we were carrying our own loads except when we laid them aside to engage in this more difficult task. It was hot down in that narrow gorge, and while the river was just below us, it was out of reach, and we felt the need of water greatly before we got off the ledge of rock. The wall towered above us to a height of 3,200 feet; Chuar Butte, directly across the river, raised its level top to an equal height, so that we were in a canyon of that depth, and less than half a mile wide at the top. It was late in the afternoon when we dropped

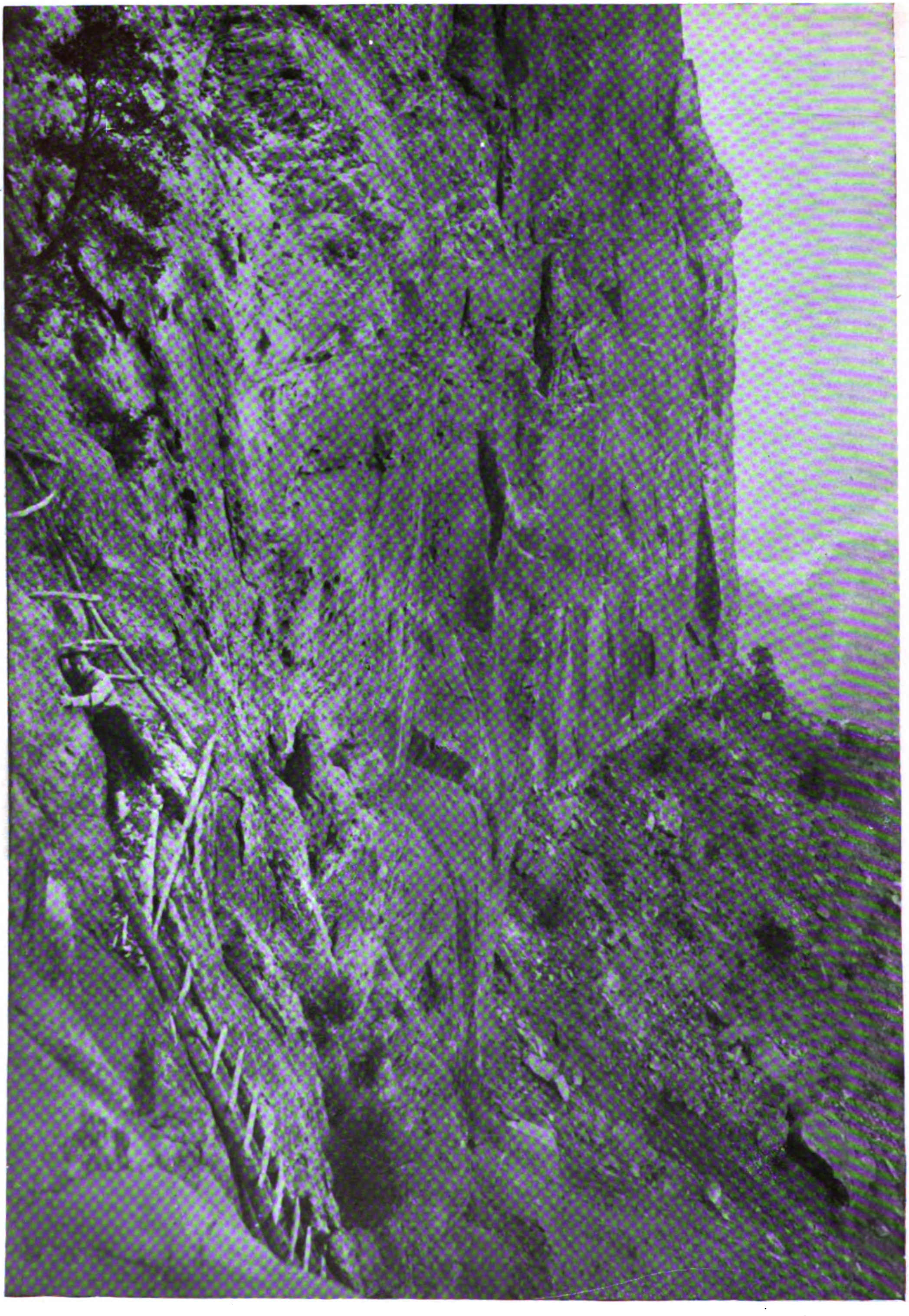


Photo by Kolb Brothers

A SERIES OF LADDERS PLACED BY MINERS MANY YEARS AGO MADE THE HUMMINGBIRD TRAIL UP THIS 420-FOOT WALL

The ladders are now badly decayed and the trail no longer used. The mountain sheep actually climb these walls down off the ledge to the level of the river close to the mouth of the Little Colorado. This is the point where the gorge takes the name of the Grand Canyon; the section above, while nearly the same in appearance, is listed as Marble Canyon, for reasons previously given.

THE LITTLE COLORADO RIVER

An exclamation of surprise broke from us when we saw the Little Colorado. The water of the Colorado, now muddier than ever, and 50 feet above the low-water mark, had dammed up the smaller stream into a deep, quiet pool half a mile or more in length. Its color was a deep indigo blue, and contrasted greatly with the water of the other stream. It is a pity that we have to record the fact that the water was strongly mineral and very unpalatable to the taste. The water in the Colorado, with all its mud and sand, was much preferable to it for drinking purposes.

We had been told of a small clearing a short distance up the canyon, and found it as described. A small level spot had been cleared of willows and mesquite, and had been cultivated at some time many years before. A small stone building, much resembling a cliff-dwelling, had been built under an overhanging wall. A plow had been packed in over this trail which we had found so difficult with our light loads. Cooking utensils and a coil of rope had been carefully concealed in a crevice in the rocks, then covered with sand and rocks. The wind, however, had blown enough sand away to reveal their hiding place.

A DECOY FOR A SETTLEMENT

It is quite likely that the person who had lived here was interested in prospecting, and was trying to raise enough vegetables for his own needs. Imagine living in such a place! Still it is not unusual to find men in these out-of-the-way corners of the West, happy and contented with their lot, diligently searching for the fortune which they feel sure they will find before another week has passed.

What a secluded spot it was! Nothing disturbed the utter stillness of the air. The sun sets early in these deep canyons, and the intense heat of midday had moderated somewhat. After locating our camp, we went down to the river for a plunge, where our attention was called to a peculiar noise. We had seen many mountain-sheep tracks in this vicinity, and thought for a while that the noise was caused by a slide of shale, but we could not locate any movement.

Then Emery discovered what it was. On the opposite side of the pool the fins and tails of numerous fish could be seen above the water. The striking of their tails had caused the noise we had heard. The "bony tail" were spawning. We had hooks and lines in our packs, and caught all we cared to use that evening.

GILA TROUT

They are otherwise known as Gila Elegans, or Gila Trout, but "bony tail" describes them very well. The Colorado is full of them; so are many other muddy streams of the Southwest. They seldom exceed 16 inches in length, and are silvery white in color. With a small flat head somewhat like a pike, the body swells behind it to a large hump. Behind the dorsal fin, which is large and strong, the body tapers down slender and round, ending with a large, strong tail. They are nicely flavored fish, but are filled with countless small bones which divide and subdivide until they are almost like needle points.

As darkness settled over us that evening we began to wonder if our camp on the sand was to be as comfortable as we had anticipated. We had rejected the rock building as a sleeping place on account of the closeness of the atmosphere, added to the fact that it was the home of innumerable rats. As the hour grew late the absolute stillness of the air of an hour previous changed to a violent wind which went tearing up the canyon, laden with sand from the shores of the Colorado. Instead of diminishing in fury, as we had hoped it would, it kept increasing, coming first from one side, then from the other. We found that the junction of the canyons was the very center of the maelstrom of wind which

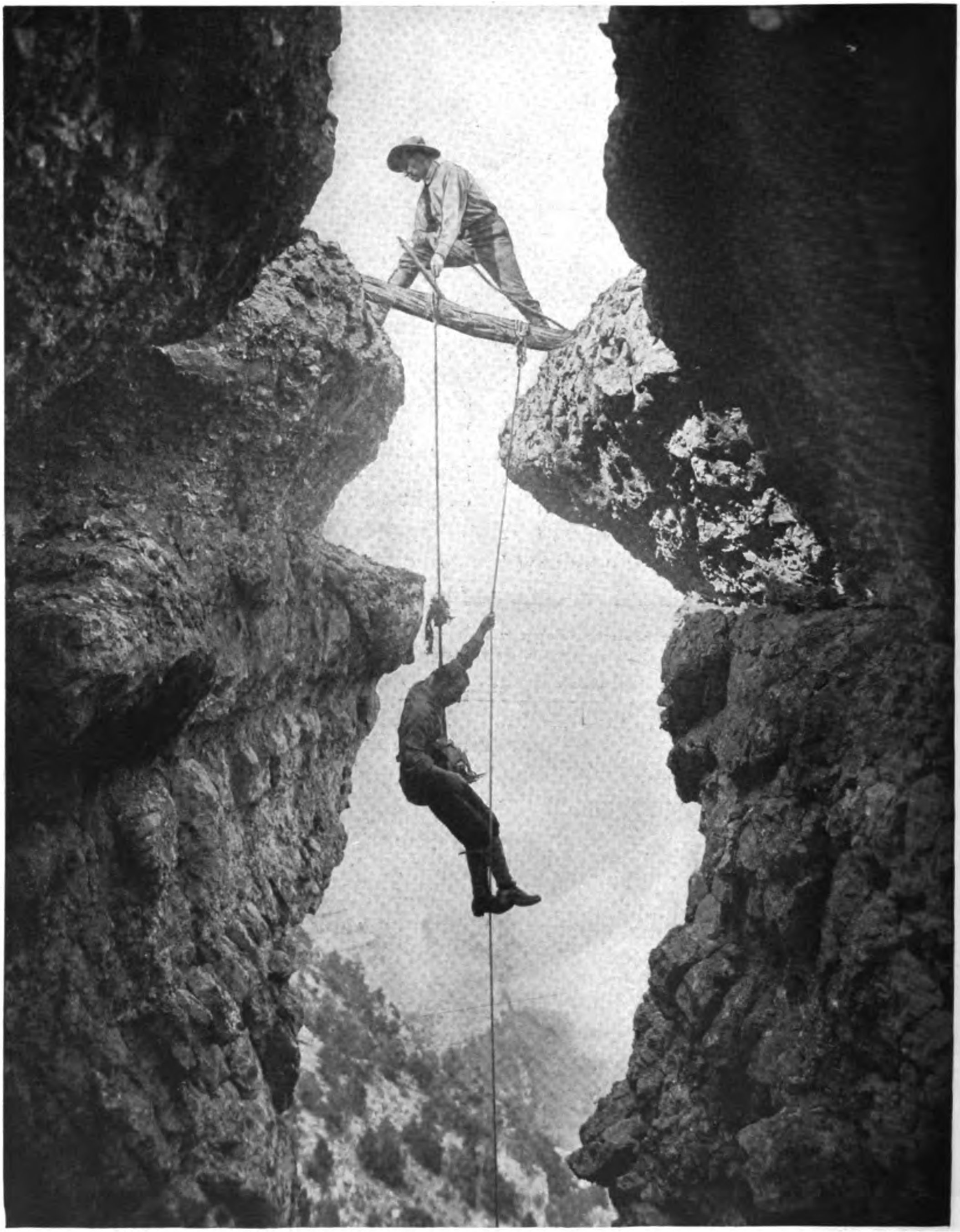


Photo by Kolb Brothers

HOW A DIFFICULT PHOTOGRAPH IS SECURED

This rather dangerous method was necessary to take the photograph on page 129, showing one mile of trail. Two ropes are used; one tied to a log, the other given one turn around the log. The operator sits in a loop in this second rope and is lowered to a ledge below, from which point the desired view may be secured. Then he climbs the rope which is tied, and the second rope is pulled in as it becomes slack. Thus the operator can rest when he becomes tired. The ledge in this case was 55 feet below. Had anything happened, the drop would have been about 300 feet.

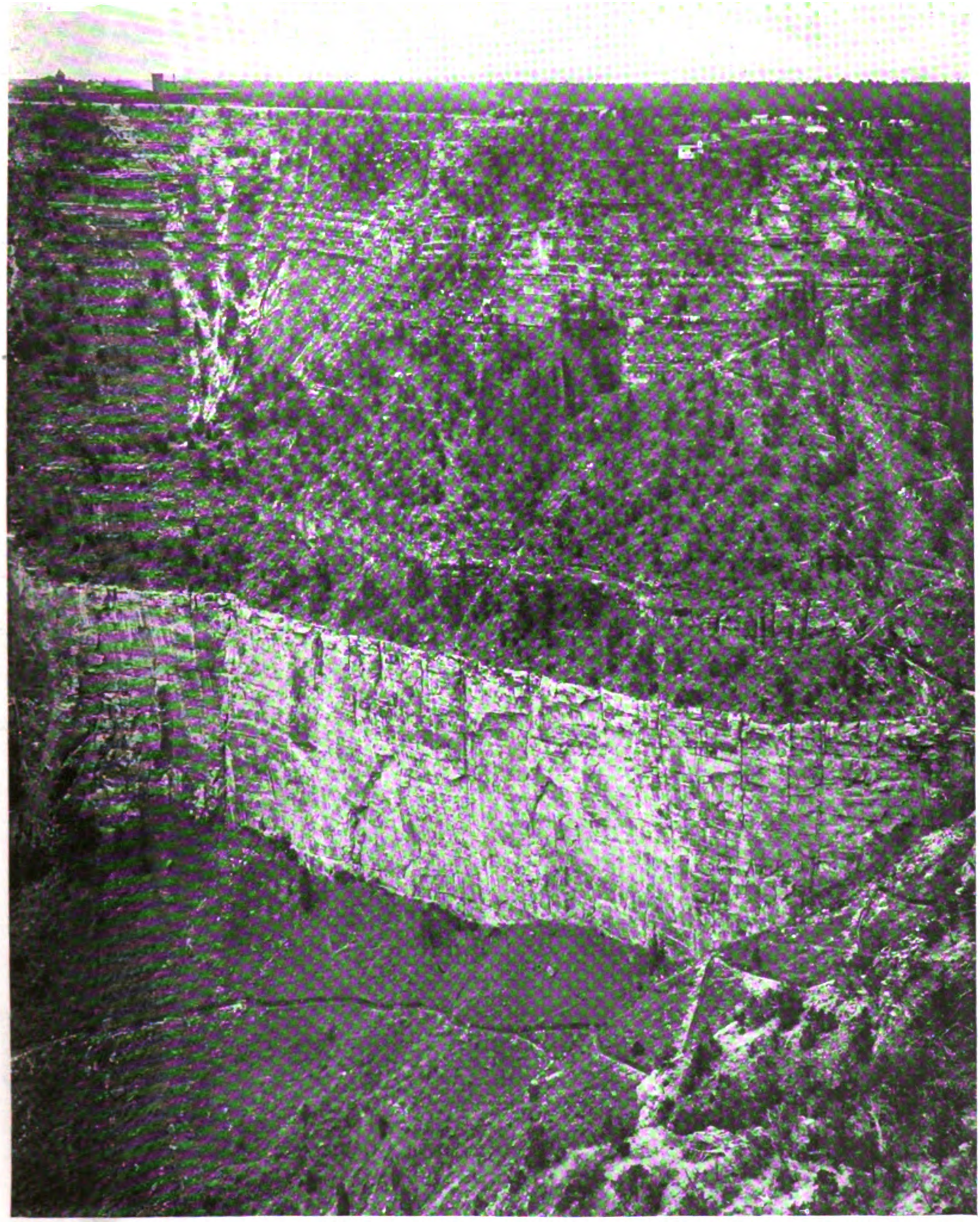


Photo by Kolb Brothers

THE FIRST MILE OF THE BRIGHT ANGEL TRAIL

The sheer wall covers the cherty limestone and the cross-bedded sandstone walls, 1,000 feet in thickness. The buildings on top, reading from the left, are El Tovar Hotel, the Bright Angel Hotel, and Kolb Brothers' studio, a little below the top of the canyon wall. The photograph was difficult to secure, and was taken as described on the opposite page.

Photo by Kolb Brothers

HOW WE BROUGHT IN THE LUMBER TO BUILD A STUDIO IN THE CANYON

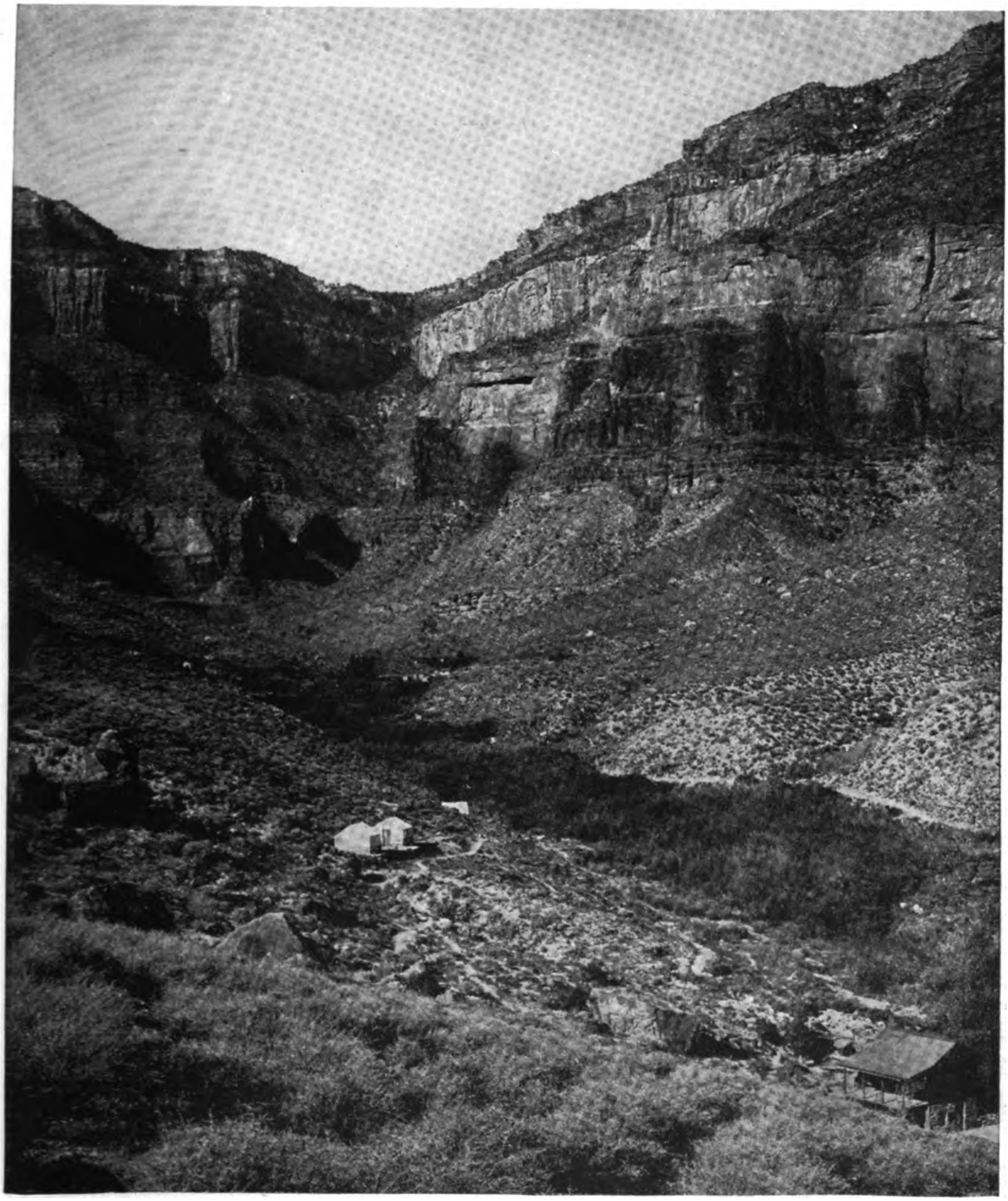


Photo by Kolb Brothers

THE KOLB BROTHERS' STUDIO (LOWER RIGHT-HAND CORNER) AND CAMERON'S INDIAN GARDEN IN THE CANYON, 3,200 FEET BELOW THE RIM

This shows the site of the Bright Angel trail from the rim to the plateau. It takes about 2¼ hours to make the descent to this point. The granite gorge. 1,300 feet deep, lies below the plateau (see page 124). The picture shows well the faulting of the rock near the top, where sections of the trail also may be seen.

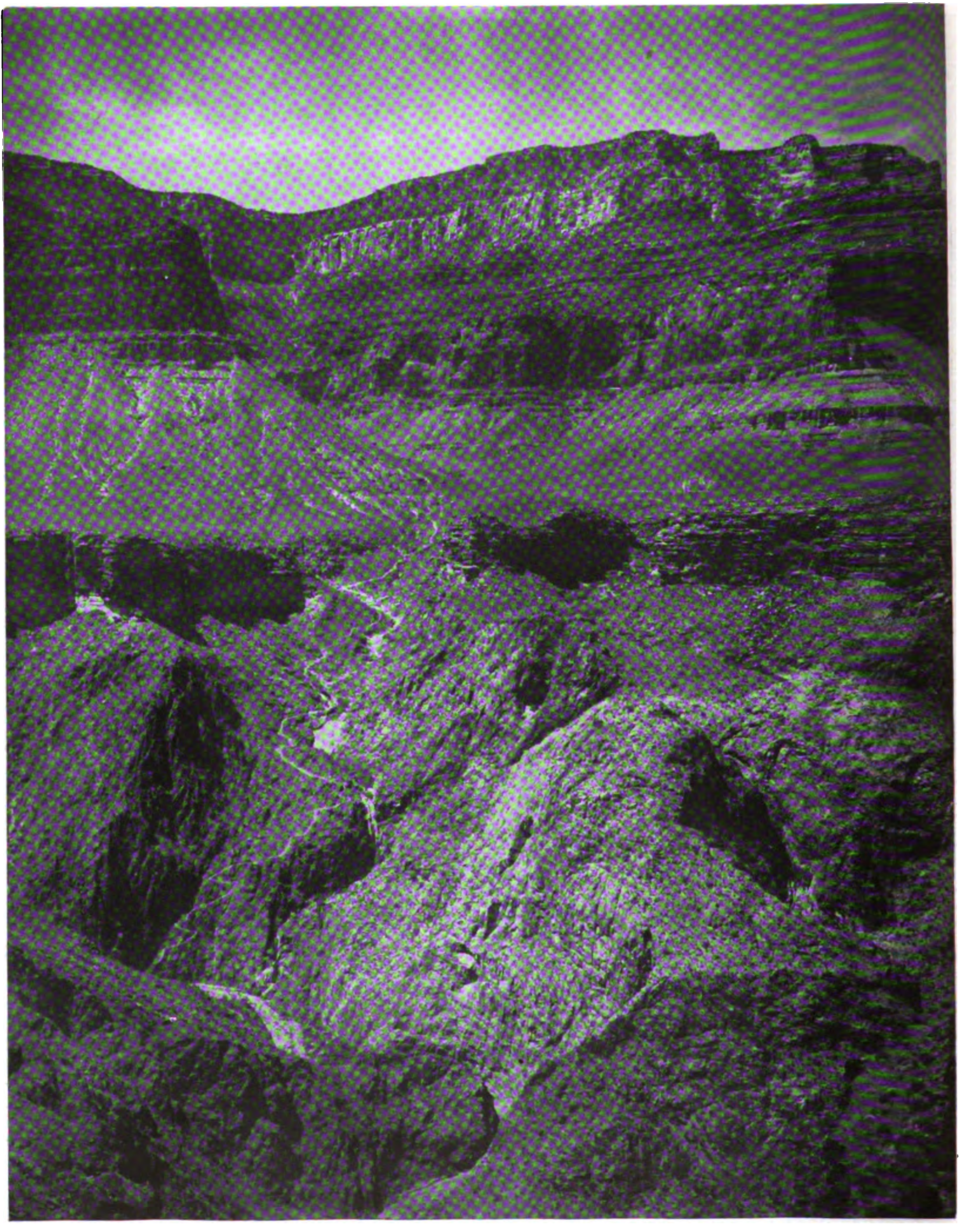


Photo by courtesy of the American Magazine

THE BRIGHT ANGEL TRAIL FROM THE TOP TO THE BOTTOM OF THE CANYON

A more distant view than that on page 129, and showing the corkscrew route at the bottom in addition to that above the plateau. Close examination will show the Tonto trail on the plateau, to the right and left of the Bright Angel trail.

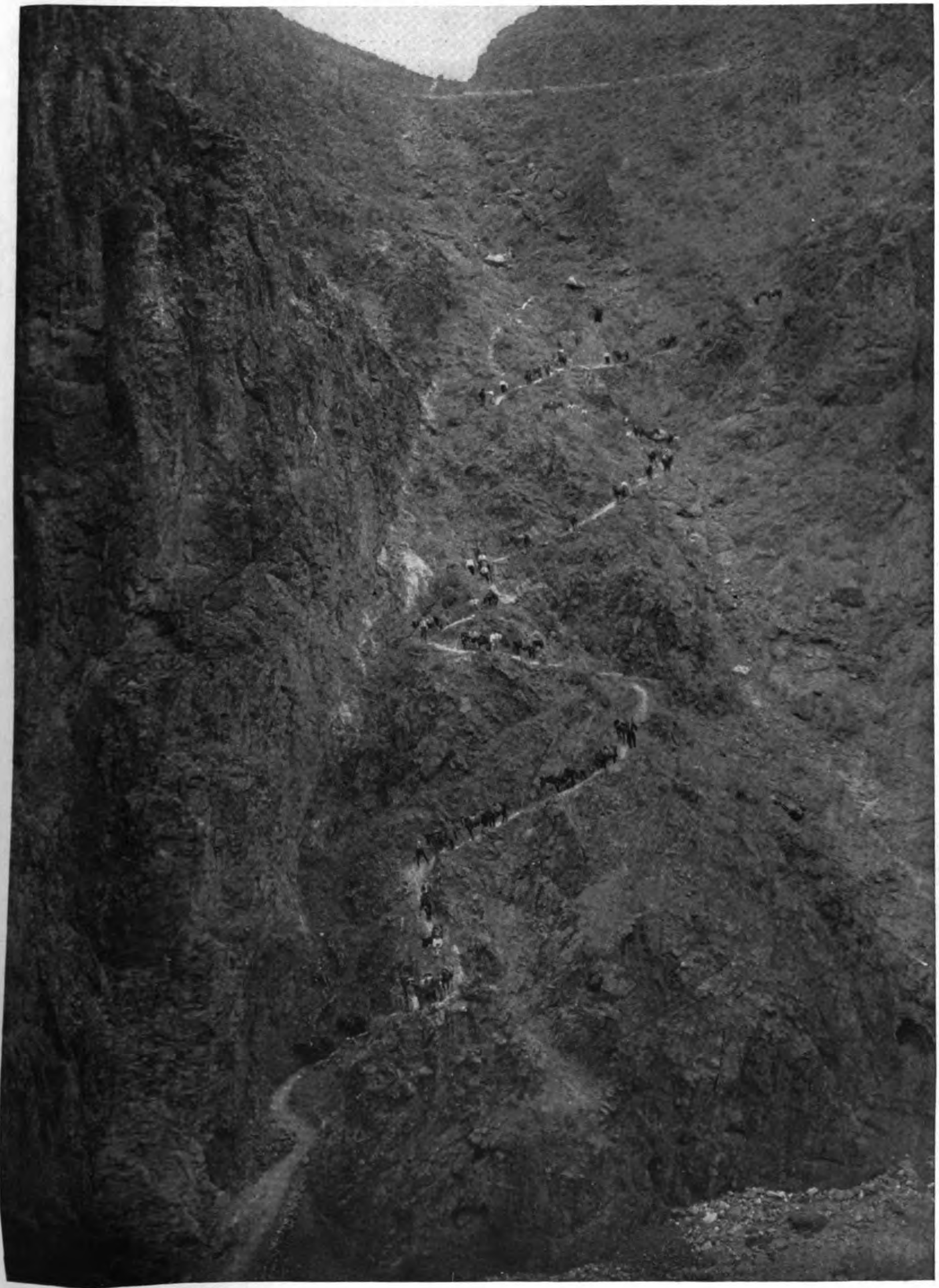


Photo by Kolb Brothers

THE DEVIL'S CORKSCREW ON THE BRIGHT ANGEL TRAIL

This is in the granite gorge beneath the plateau, 4,000 feet below the rim poured in on us from all sides. The Painted Desert was directly above us, and it added its quota of sand, as if we did not have enough already to contend with.

A REAL SAND STORM

We had seen sand storms before, but none to equal that. It literally rained sand from the desert above. Our camp articles, which had been carefully placed on shelving rocks, were blown helter-skelter over the place; our bed, weighted down with stones, was the only refuge available, so we crawled into the blankets and covered up our heads, waiting for the passing of the storm. It is doubtful if the building could have been any more suffocating than our bed, covered up as we were. We both fell asleep after a while, and neither of us knew just when the wind ceased. When we awoke all was as quiet as before the storm.

The air, however, as is usual after these storms, was a brick-red color for two or three days.

We had long anticipated the next day's exploration. Prospectors had told us of having seen a series of cataracts about 15 miles up the river, but imagined that it was not possible to follow up the bed of the river, as they had only seen them from above. We were anxious to photograph the cataracts also, to learn if it was possible to reach them by the river. We had taken the season when the water was low on the Little Colorado for that reason. Loading ourselves with the inevitable cameras and plates, a lunch, and a large canteen of muddy water from the Colorado, we began our journey, starting at an early hour, for we were sure that we had a hard day's work ahead of us. The burro was left to await our return.

A DANGEROUS TRAIL

The trip was somewhat easier than we had expected to find it; but it was hard enough, especially in spots. We took advantage of the shore wherever possible, sometimes finding long stretches of hard, firm sand on which we could make good time. It was quite different when we had to climb the canyon's sides, for the heat was intense when we got away from the river. Some of the sand, too, was very deceptive, and instead of being hard and firm, was treacherous quicksand. At times we spurted quickly over these places, resting on islands of solid rock, then would make another spurt. It would have been great sport but for the loads we carried. In other sections we shunned the deposit entirely, for it was very soft and slippery, being about the consistency of slacked lime or of lard. We managed to pass it all, however, by crossing the stream two or three times, climbing the banks where it was possible, and taking advantage of the fallen rocks which lined the river's edge. About noon we reached the cataracts, which extended up the stream for half a mile or more (see page 138).

The canyon walls were very narrow here, and about 2,500 feet high.

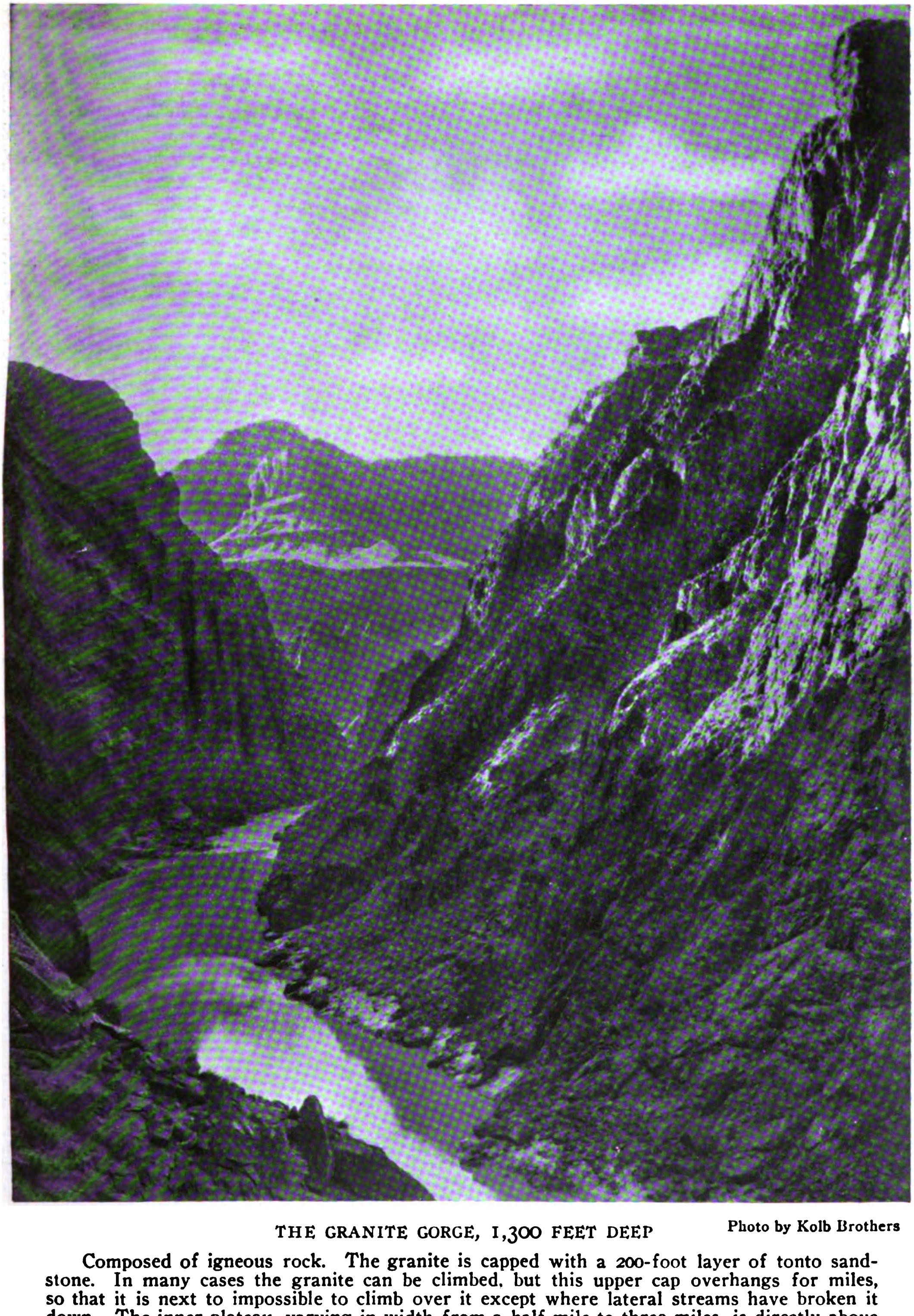
We felt well repaid for our efforts. We not only secured our coveted opportunity, but had succeeded in doing what was commonly thought to be impossible. We went far enough above the ledges to find that it was entirely feasible to make our way still farther up the canyon, but time would not permit. We knew from the rock formation that we were within a mile of a spot we had previously visited on our initial trip into the canyon several years before. Were it not for the fact that we had a burro and our camp to look after, we would have gone on up the canyon and climbed out as we did before.

III

SHOOTING THE RAPIDS OF THE COLORADO

OUR photographic boating trip began September 8 at Green River City, Wyoming, where the U. P. R. R. crosses the Green River, hundreds of miles above our home in the Grand Canyon of Arizona.

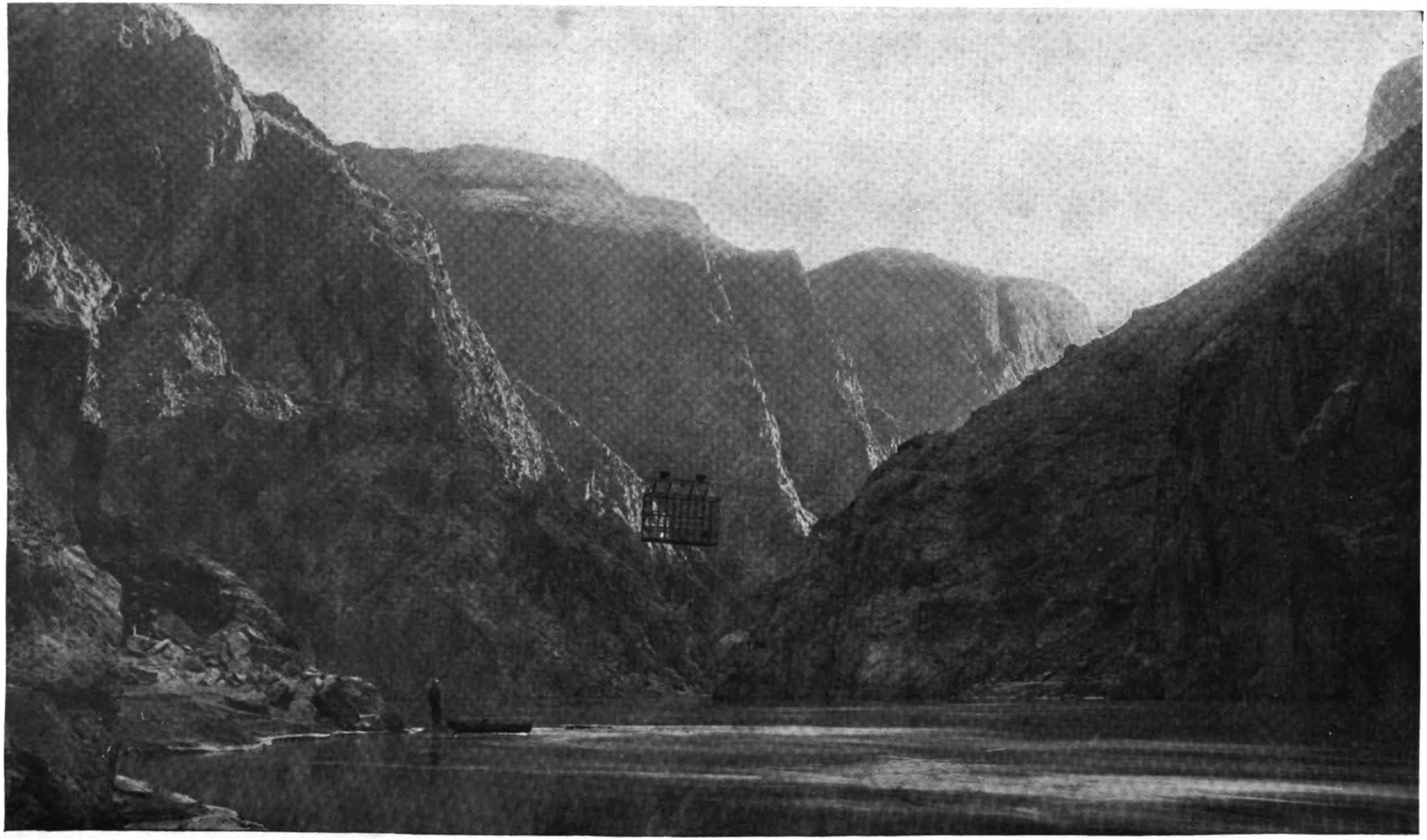
A glance at a map of the Southwestern States (see page 153) will show our course down the Green and Colorado rivers. From Green River City, Wyoming, the river flows almost directly



THE GRANITE GORGE, 1,300 FEET DEEP

Photo by Kolb Brothers

Composed of igneous rock. The granite is capped with a 200-foot layer of tonto sandstone. In many cases the granite can be climbed, but this upper cap overhangs for miles, so that it is next to impossible to climb over it except where lateral streams have broken it down. The inner plateau, varying in width from a half mile to three miles, is directly above this tonto sandstone. Nearly all the temples, as they are called, rest on this formation. The granite extends nearly sixty miles in the first or upper part of the Grand Canyon, then disappears, emerging again near the lower reaches of the Grand Canyon. Some of the worst rapids we had to negotiate on the journey were found in the granite gorge (see also page 146).



RUST'S TRAMWAY, NEAR THE MOUTH OF BRIGHT ANGEL CREEK

Photo by Kolb Brothers

The cable spans a 450-foot stream and the cage hangs about 30 feet above the water. Sightseers and hunters are taken across on this tramway to Rust's Camp, on Bright Angel Creek, and there outfitted for a trip into the Kiabab forest, on the north rim, where mountain lion abound. The nearest railroad is in Utah, over 200 miles distant.

south for a distance of 60-odd miles; then turning directly east shortly after crossing the State line into Utah, it parallels the northern boundary of Utah and crosses into Colorado at the extreme northwest corner. This is the only point at which the Green River or its successor, the Colorado River, touches the State of Colorado. It is a common mistake to confuse the canyon of the Grand River in Colorado with the Grand Canyon of Arizona. After making a loop about 25 miles in length, the Green River returns to Utah, flowing in a general south-southwest direction through the eastern part of this State.

Four hundred miles below Green River City, at Blake, Utah, the stream is crossed by the D. & R. G. R. R. Between these two towns there is only one village on the river where provisions could be obtained. This was at Jensen, Utah.

WHERE RIVERS MEET

Over 100 miles below Blake, Utah, the Green River is joined by the Grand, flowing in from Colorado. These streams, combined, form the Colorado River. The Colorado River, running in a more southwesterly direction, crosses into Arizona, after about 150 miles in Utah. On being joined by the Little Colorado it changes its course and flows to the west, with many twists and turns. This is the section known as the Grand Canyon. Finally it forms the dividing line between Nevada and California on the west and Arizona on the east. It empties into the Gulf of California, in Mexico, about 100 miles from the U. S. line.

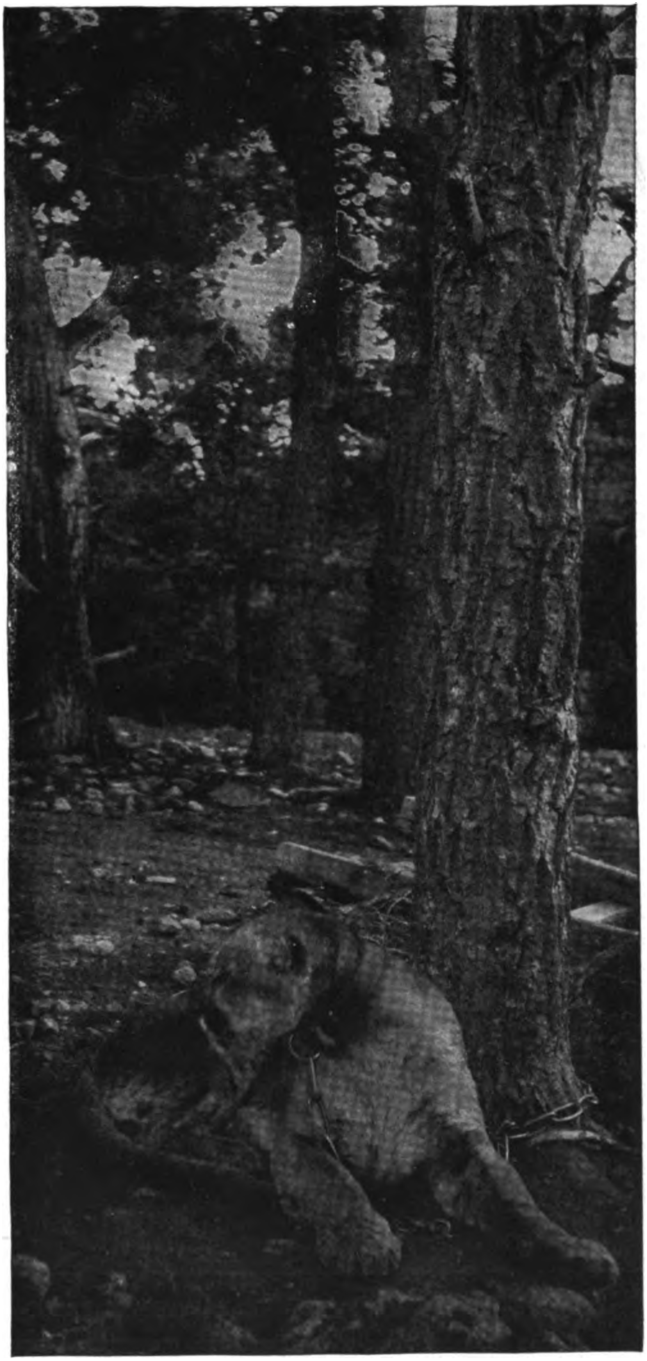
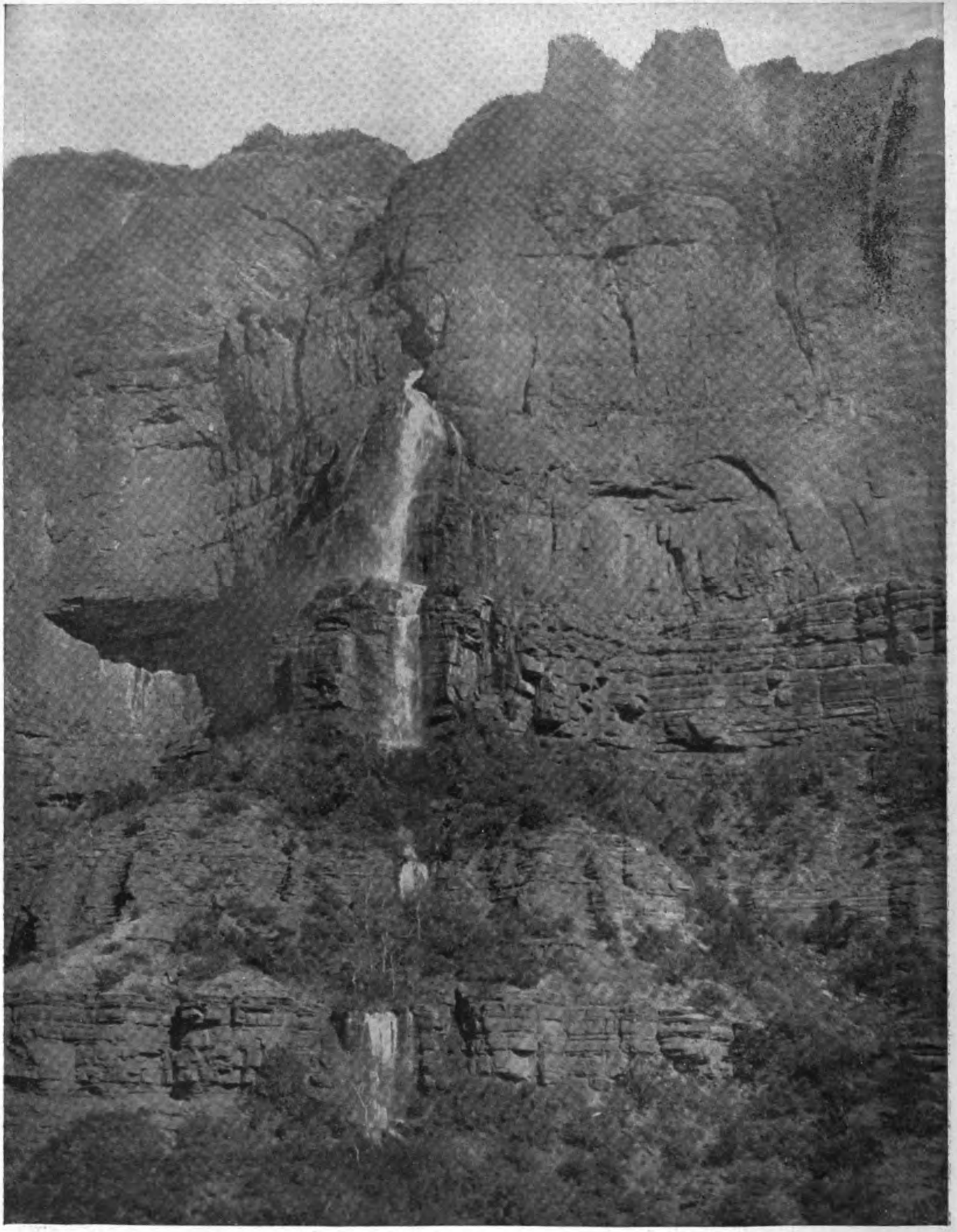


Photo by Kolb Brothers

A MOUNTAIN LION

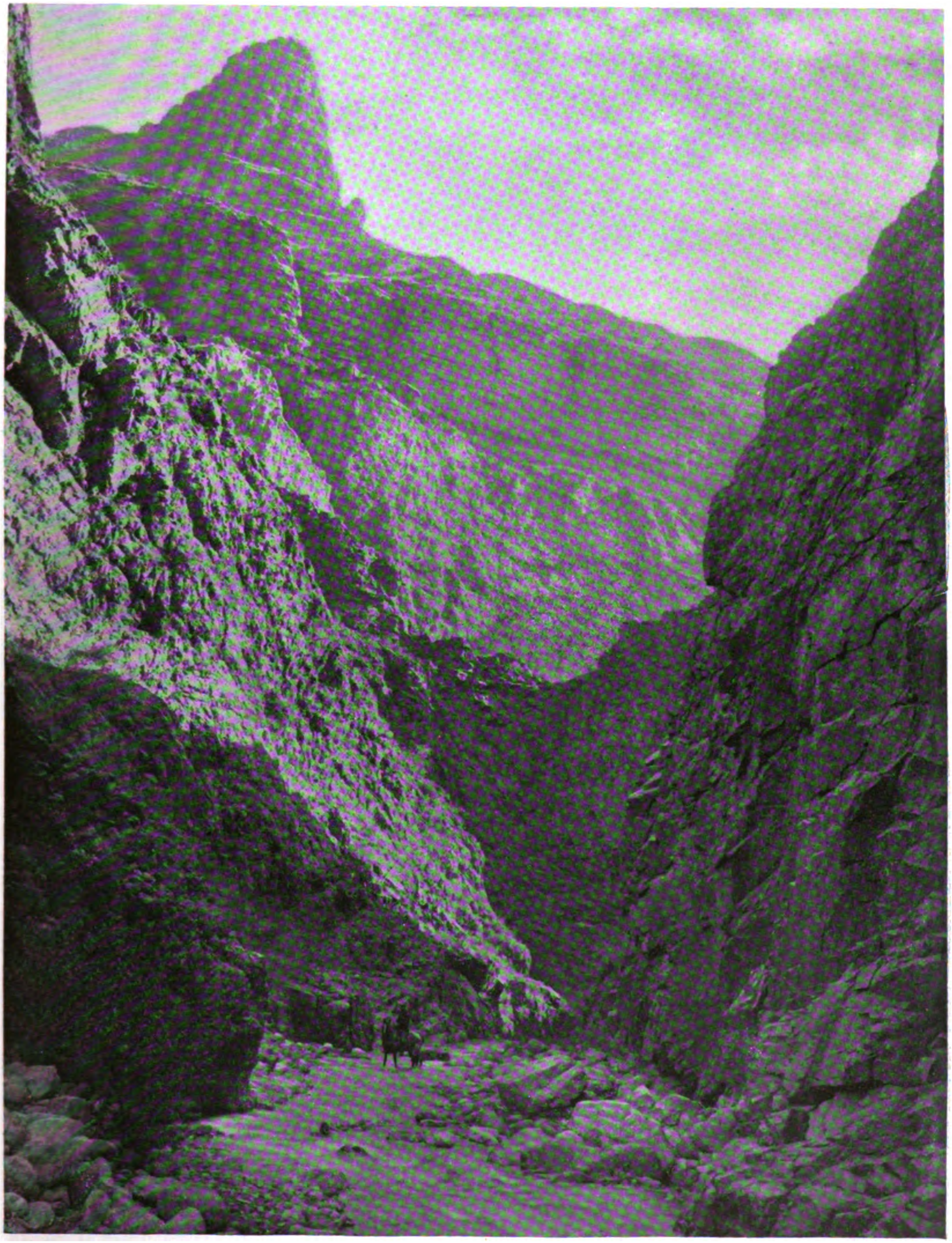
Captured by "Buffalo Jones" on the north rim of the Grand Canyon, packed by Dave Rust down Bright Angel Creek, across the river on the tramway, then up to the south rim on a burro. This lion afterward escaped in Las Vegas, Nevada, and ran through the main streets of the town.



CLEAR CREEK FALLS

Photo by Kolb Brothers

These falls are close to 800 feet high, measuring from the cave from which they emerge to the bottom of the last leap. They are intermittent, running only about three months each year during the spring. A four days' journey was made to secure this one picture. The 1,300-foot walls of Bright Angel Canyon (see page 139) had to be climbed after a night spent in Rust's Camp. No load was carried except the cameras, provisions, and a little water. A deer trail six or seven miles long simplified the work of finding a way across the plateau. Then the walls of Clear Creek, equal in height to Bright Angel Canyon, were descended. The falls were reached after wading the stream for six or seven miles, and a picture secured as the shadows began to creep up the wall. Camp was easily made that night. There were no blankets; just a bed in the sand, beside a camp-fire of cottonwood logs and the yucca. The return journey to Bright Angel was made on the following day. While they can be seen from a distance and have been known for many years, the falls here have been visited by only this one party.



BRIGHT ANGEL CREEK

Photo by Kolb Brothers

Looking toward the south wall of the Grand Canyon. This wall had to be climbed on the journey to obtain the picture of Clear Creek Falls shown on the preceding page

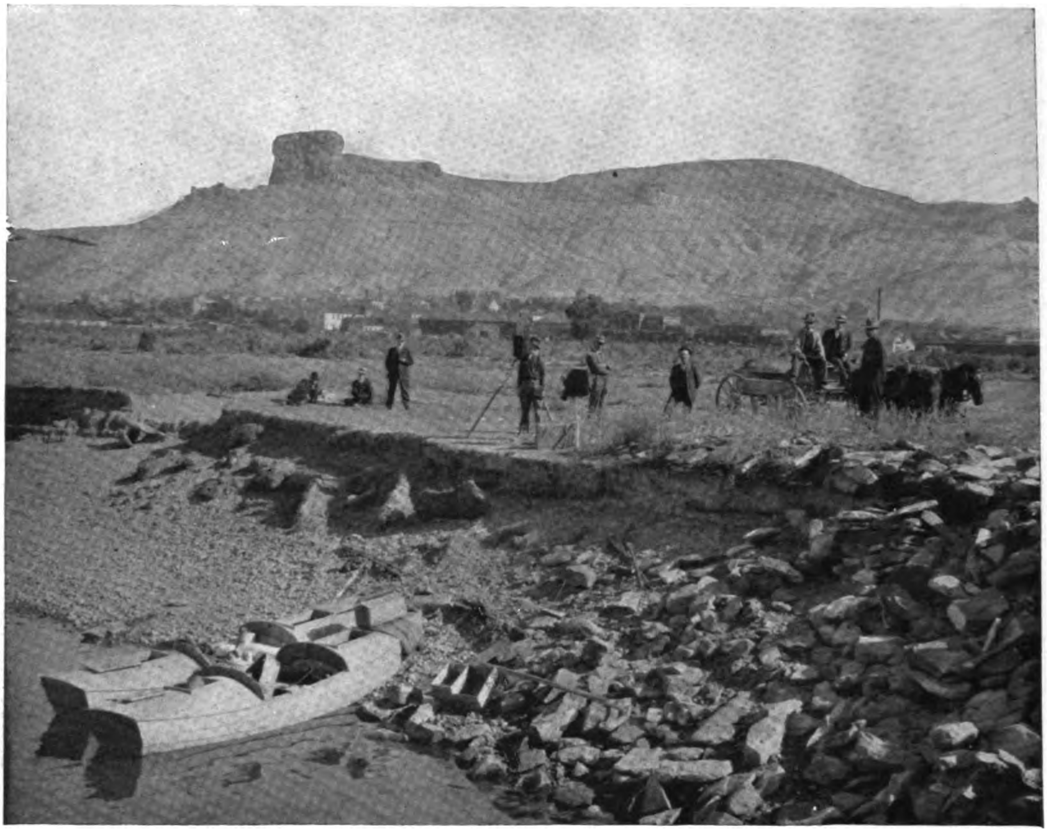


Photo by Kolb Brothers

READY TO EMBARK AT GREEN RIVER CITY, WYOMING, FOR THE 850-MILE TRIP THROUGH THE CANYONS TO BRIGHT ANGEL TRAIL, IN THE GRAND CANYON

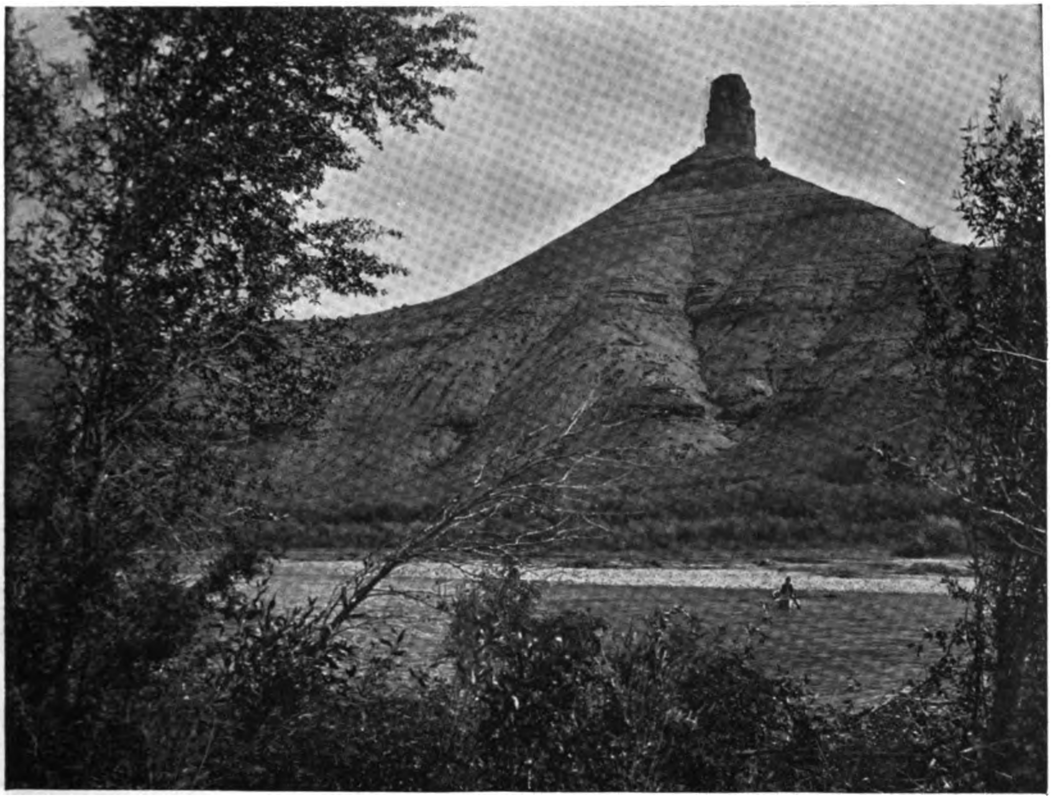
The wife and baby had been instructed to look for a signal fire in two months' time in Bright Angel Canyon (see text, page 139)

Five parties had made the entire trip from Green River, Wyoming, through all the canyons to Needles, California. The first was Major Powell's world-famous exploration in 1869, supplemented by a second voyage two years later through all but about 125 miles of the Grand Canyon, where the second attempt was abandoned on account of high water.

The second complete trip was made by Nathan Galloway, a trapper and hunter, with a companion named Richmond, about 1891. The third was headed by Julius F. Stone, of Columbus, Ohio, accompanied by Galloway and two others. This trip was made in the fall and winter of 1909, the party leaving Green River September 12, just about two years before our own attempt. Two other parties had succeeded in making the journey through the Colorado River canyons, starting at Green River, Utah. These are usually referred to as the Brown-Stanton party and the Russell and Monnette expedition. The parties that have failed to get through the first short canyons far outnumber those who have been successful.

RAPID-FLOWING WATERS

To get an idea of the descent of the Green and Colorado rivers, compare it with the St. Lawrence. From Lake Michigan to the Gulf this latter stream has a fall of 600 feet. This includes Niagara Falls, the Gorge Rapids, and many others. In an equal distance the Green and Colorado rivers fall 6,000 feet. Between the rapids there are many quiet stretches. These are formed by masses of falling



FIRE HOLE CHIMNEY Photo by Kolb Brothers

One of the several butte formations found about 30 miles below the town of Green River, Wyoming

rocks, which dam the river, or by lateral streams, which wash great masses of rock and debris into the stream during the flood stages. This often makes the water placid above; but quite as often the water pours over these barriers in a torrent.

The Green River townspeople came down to cheer us with tales of the others who had started out and were never heard from again. Several men, whom we had engaged to accompany us, from time to time, disappointed us when the time came to leave. The only one engaged who did show up was James Fagen, a young man inexperienced at "roughing it," but strong, cheerful, and willing, and we were glad to have him along. We had wanted two assistants to help us with camp duties, photographic work, and in making portages around impassable rapids. With Major Powell's record of over 100 portages, we had some idea of the work ahead of us. To offset the handicap of our small party we had, however, the benefit of the experience of the others who had gone through before us.

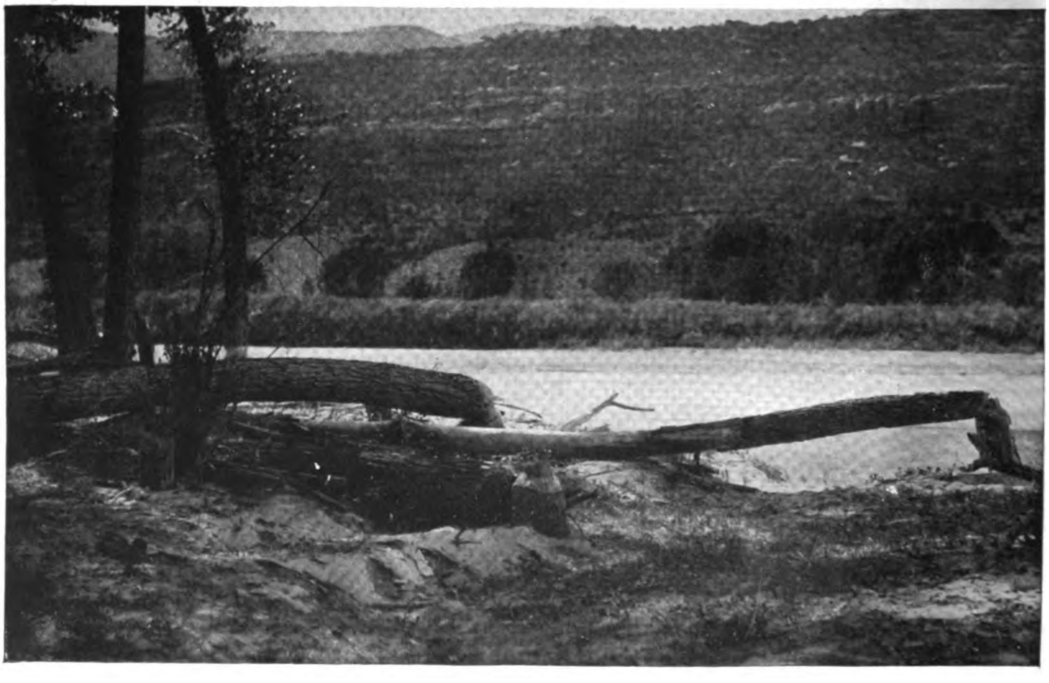
Our boats, when loaded, weighed 1,200 pounds each, and looked like pretty big loads for one man to handle. The boats were flat-bottomed, but with considerable raise at either end. They were decked both bow and stern, with sealed air-tight chambers in each end. Our five cameras and a motion-picture camera were carried in these chambers; likewise, a month's provisions, photographic plates and films, and all necessary camp material. The oarsman sat in the open compartment, or cockpit, and the extra man on the deck behind.

FLAMING GEORGE, HORSESHOE, AND KINGFISHER

Though 16 feet long, the *Edith* and the *Defiance* looked small enough when compared with the width of the Green River

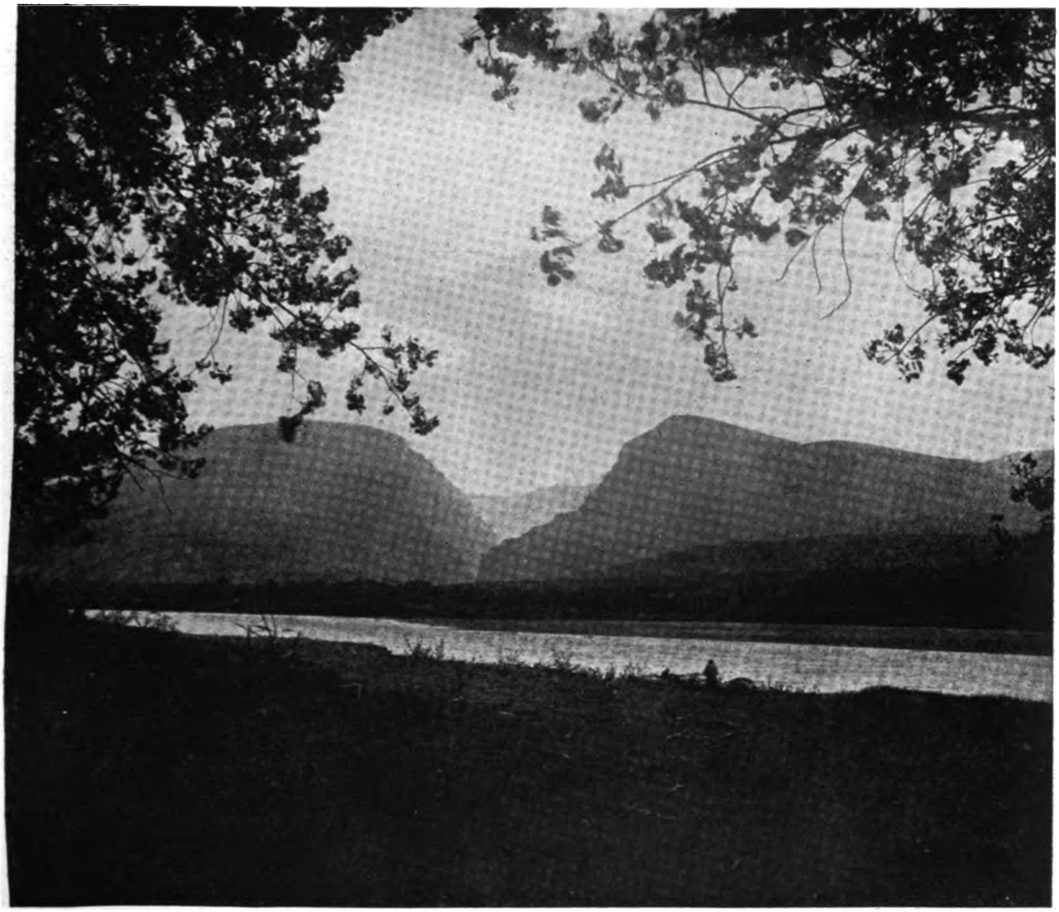
THE OWNER OF THIS RANCH IN BROWN'S HOLE HAD BEEN MURDERED AND HIS BODY SENT DOWN THE RIVER IN A BOAT

We found the door open and books, pictures, and furniture piled in the middle of the rooms (see text, page 144)



Photos by Kolb Brothers

COTTONWOOD TREES ABOUT ONE FOOT IN DIAMETER CUT DOWN BY BEAVERS (SEE TEXT, PAGE 147)



REMARKABLE ENTRANCE OF LODORE CANYON Photo by Kolb Brothers

The river cuts directly through the mountains seen in the distance. One mile inside the entrance the walls are 2,700 feet high and nearly sheer (see text, page 148)

when we started, for here it was 300 feet wide. We enjoyed ourselves thoroughly in the 60 miles of open country—hunting and fishing or listening to Jimmie's songs. He had a trained voice. His singing ceased for some reason or other shortly after we entered the canyons.

There were no rapids of consequence in the first three canyons—Flaming Gorge, Horseshoe, and Kingfisher Canyons—but our tranquillity changed shortly after entering Red Canyon.

The water was so low in Red Canyon that we struck many rocks, and we feared if this kept up that our boats would not last through the trip. Being built of cedar, less than half an inch thick, they cracked very easily.

In swift water, where there were few rocks, the boats were taken through in the usual manner, by pulling down stream; but when running bad rapids the order was reversed and the boats were turned with the bow pointing up stream. In this way we could see where we were going, and by pulling against the current the velocity was checked. The boats, being flat-bottomed and having considerable raise at either end, could be turned very quickly, and enabled us to pull from side to side and avoid the rocks ahead of us.

We had been informed before that some of these mountains were the hiding-places of men who were "wanted" in the three States which bordered near here. Some escaping prisoners had also been traced in this direction; but all signs disappeared when the mountains were

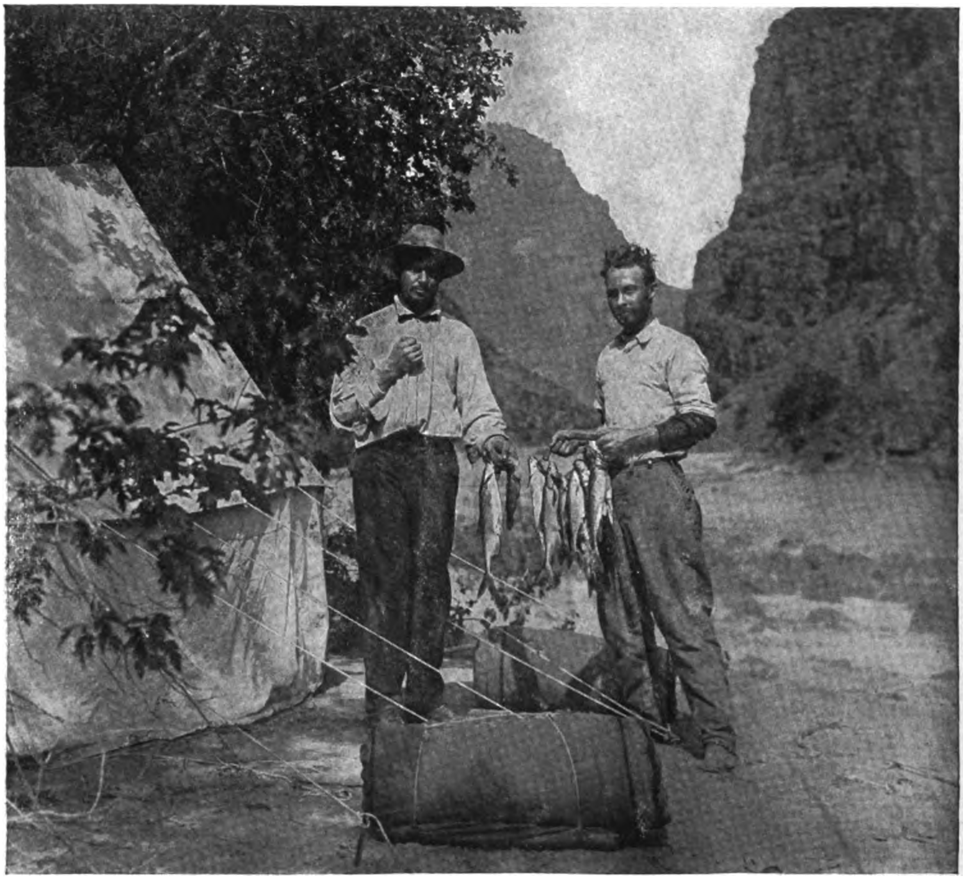


Photo by Kolb Brothers

ELLSWORTH KOLB ON LEFT AND EMERY KOLB ON RIGHT, AFTER LESS THAN ONE MONTH ON THE RIVER

These fish—a catfish, suckers, and humpback, or bony tail—were found swimming on the surface of the water, being choked by the mud brought down by high water. They were struck with oars or caught with our hands in Lodore Canyon.

reached. We found several secluded cattle ranches in these upper canyons. The young men seemed to put in most of their time at hunting and trapping, and seldom went out without a gun. They had secured some wild cats, coyotes, deer, and an occasional mountain sheep.

INNOCENT HORSE THIEVES

At one ranch we tried to buy some provisions. The men told us they would gladly supply us with what they had. In return they asked us to help them secure some of their horses from across the river, as their own boat had been taken out by high water. The horses were rounded up in a hidden valley, and were driven into the water ahead of the boat. After securing the horses, their welcome seemed to turn to suspicion, and they wanted to know what we could find in that wild country to interest us. We felt greatly relieved when we left them behind us.

Soon after emerging from Red Canyon into Brown's Hole we came to a deserted ranch. The doors were open; furniture, pictures, and books were scattered all over the place. We had previously heard reports of a murdered man's body having been found near here. I suggested to my brother that this might be his home; but we said nothing of this to Jimmie. Jimmie was worrying a good

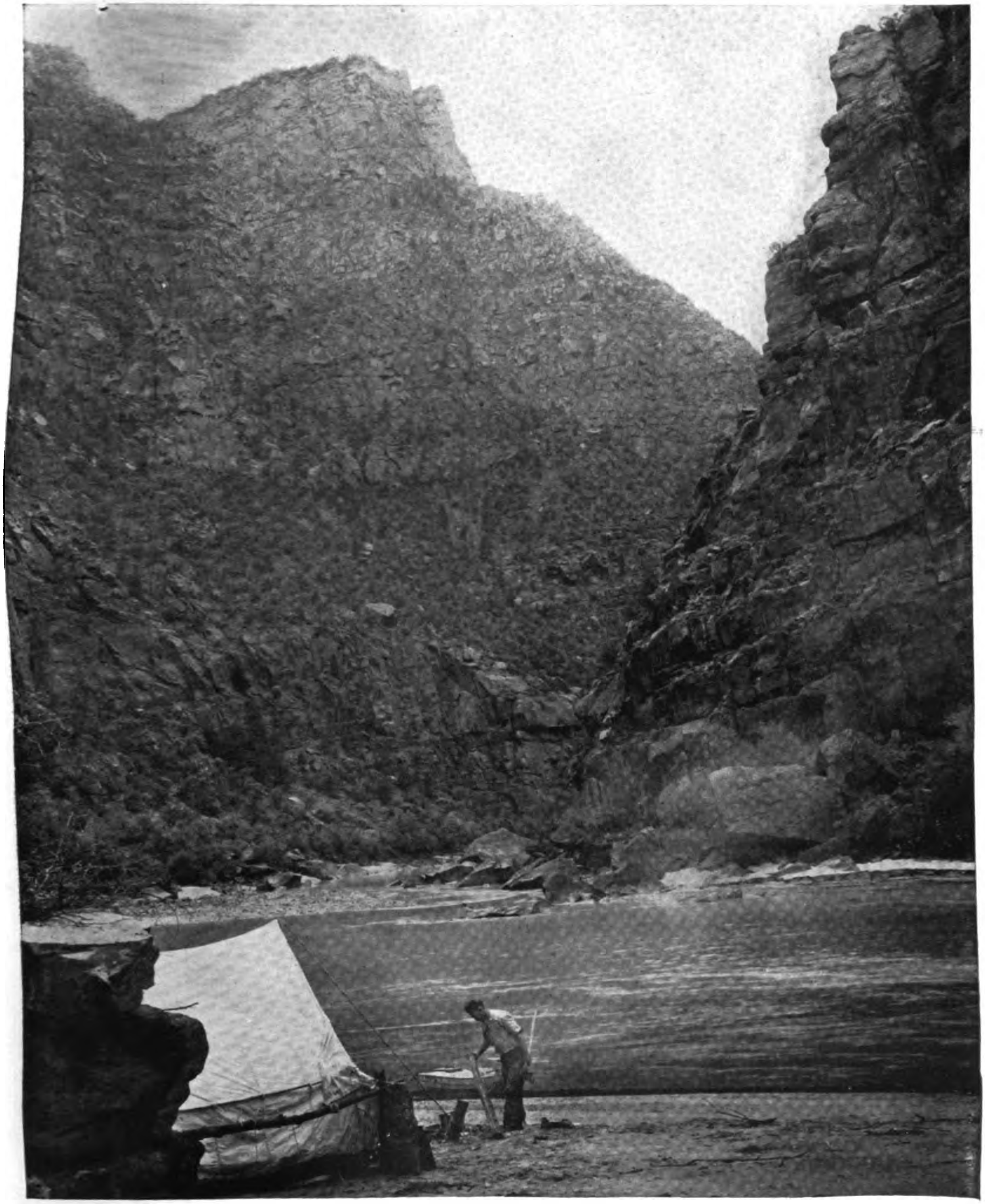


Photo by Kolb Brothers

"CAMP IDEAL": BELOW THE TRIPLET RAPIDS, IN LODORE CANYON

It is nearly impossible to describe the lonesome grandeur of this mighty canyon

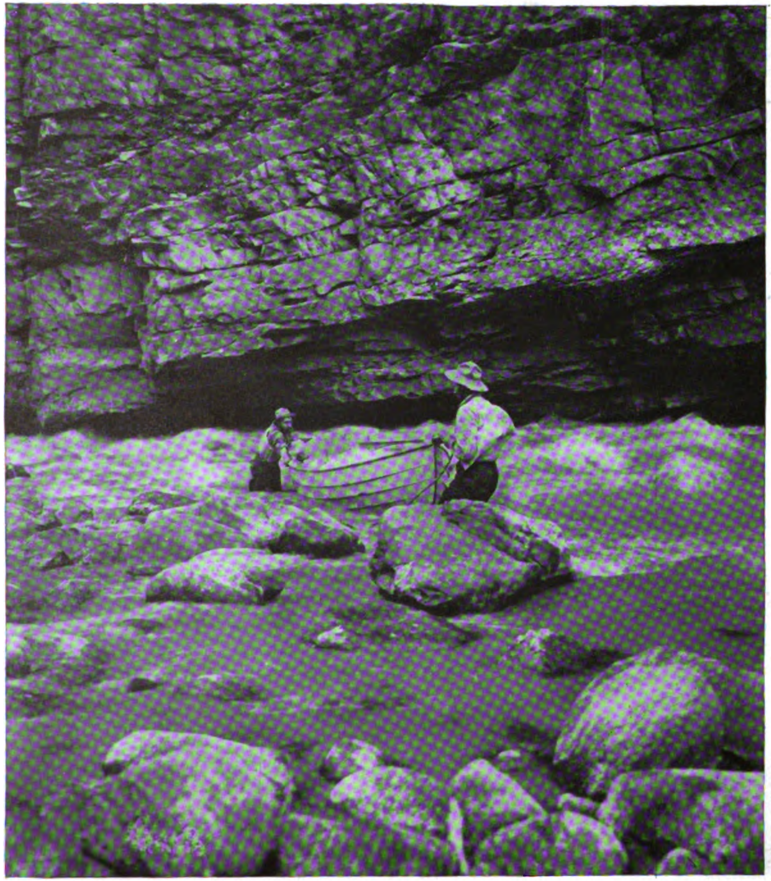


Photo by Kolb Brothers

LOWER DISASTER FALLS, IN LODORE CANYON

Note how the river has cut in and is flowing almost entirely under the wall (see text, page 148)

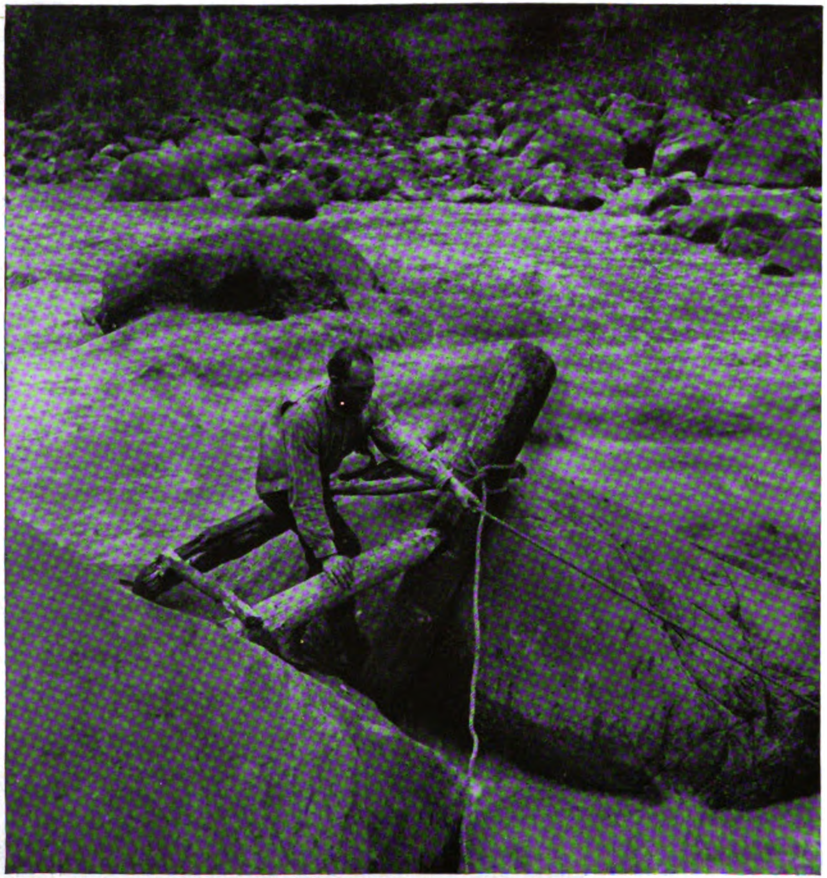
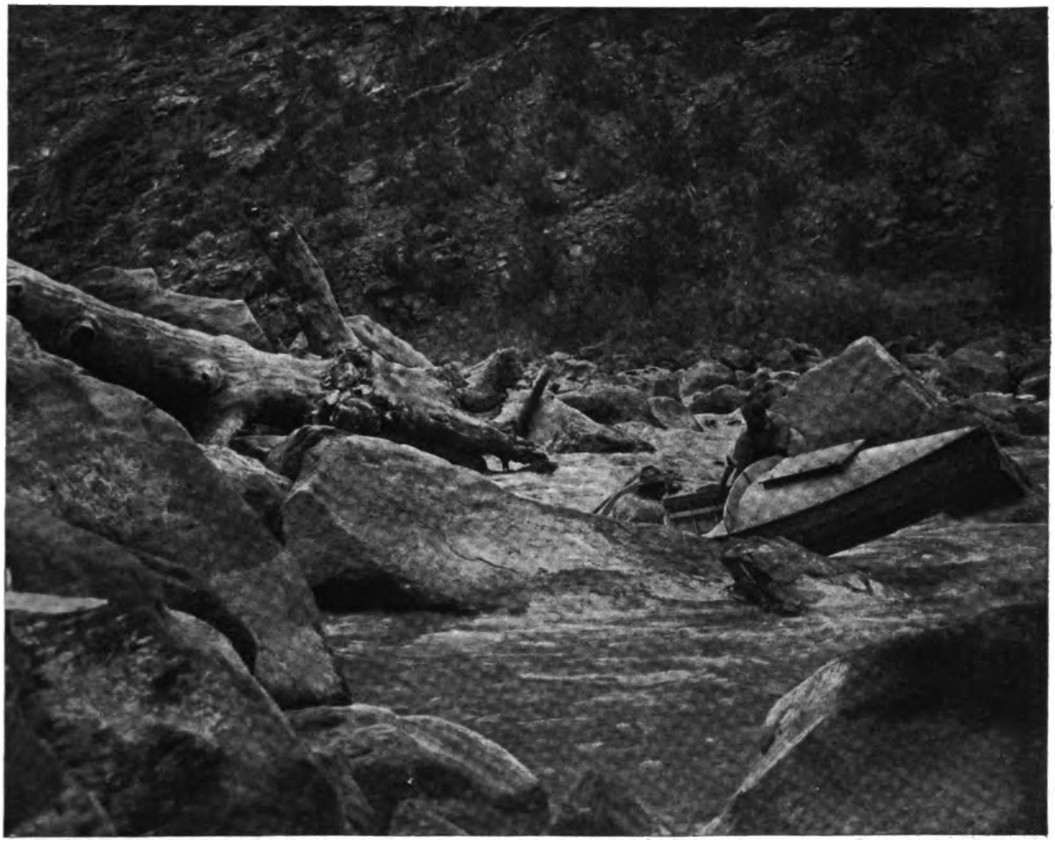


Photo by Kolb Brothers

NICE WORK AT HELL'S HALF MILE, IN LODORE CANYON

Sometimes it was necessary to change our plans instantly to avoid disaster, and rapid thinking was the order of the day (see text, page 152).



"HELL'S HALF MILE" Photo by Kolb Brothers

One of the most difficult rapids of Lodore Canyon, Colorado, on the Green River. Nothing but the motion picture gives any idea of the immense force of the water as it shoots out in a dozen different directions. The rapids increase in violence below this barrier. The slightest mishap here meant the destruction of the boat, at least, if not that of the party.

deal about our own troubles about this time.

Below this we found several other deserted ranches. On asking the few people we met the reason, they gave us evasive answers. Finally one man said that the country was infested with desperados and cattle thieves, and that a person had to be in with them or was not permitted to remain there. Our informant was there for some reason or other. We were told that the man at the first ranch had been murdered two years before; his body was placed in a boat and started down the river. We were also told that we were fortunate to get away from the ranch in the canyon with our valuables. The owner of this place had committed many depredations, and had served a term for cattle-stealing. Officers, disguised as prospectors, took employment with him, and helped him kill and skin some cattle. The skins, with the tell-tale brands, were then burned and buried. The officers turned in their evidence against him, and he was convicted.

This explained the strange actions of the men we had assisted. They thought we were trying a similar game. We had helped them steal eight horses and a colt ourselves!

In the lower end of Brown's Hole we saw a great many beaver and numberless cottonwood trees that they had cut down (see page 142). On two or three occasions our boats narrowly escaped splitting on snags of trees which they had buried in the river.

About the time we passed from Utah

into Colorado a kind-hearted woman named Mrs. Chew informed us that they had a ranch at the other end of Lodore Canyon, which we were about to enter. She had a great fear of this short but dangerous canyon. Two of her sons had once attempted its passage. They lost their boat, and climbed out over the mountains, narrowly escaping starvation.

LODORE CANYON, N. W. COLORADO

Clouds had settled down into Lodore Canyon, and it was raining when we entered it. This canyon is the most wonderful example in the known world of a river cutting through a mountain (see page 143). The river was here first. An upheaval took place across its course, but so slow that the sand-laden stream sawed its way through the rocks, keeping its old level. When we were one mile inside the canyon, its walls towered over 2,000 feet above us.

A few miles further down is a rapid which Major Powell had named Disaster Rapid (see page 146). Here one of his boats, although made of one-inch oak, had been broken completely in two. We ran the upper part of this rapid, but found ourselves on some rocks below, and could not proceed on account of the low water. It was late and we had to camp on a low, rocky island that night.

The next day we proceeded to change our camp, running our camp material across on a trolley. The stream on this side, while small and rather shallow, was swift and difficult to cross. After all weight from the boats was sent across, we proceeded to line the boats across, two men working on shore with the lines, while the other clung to the boat and maneuvered it. When ready to take the second boat across, the sun broke through for a short spell between the showers.

MAKING A MOTION PICTURE UNDER DIFFICULTIES

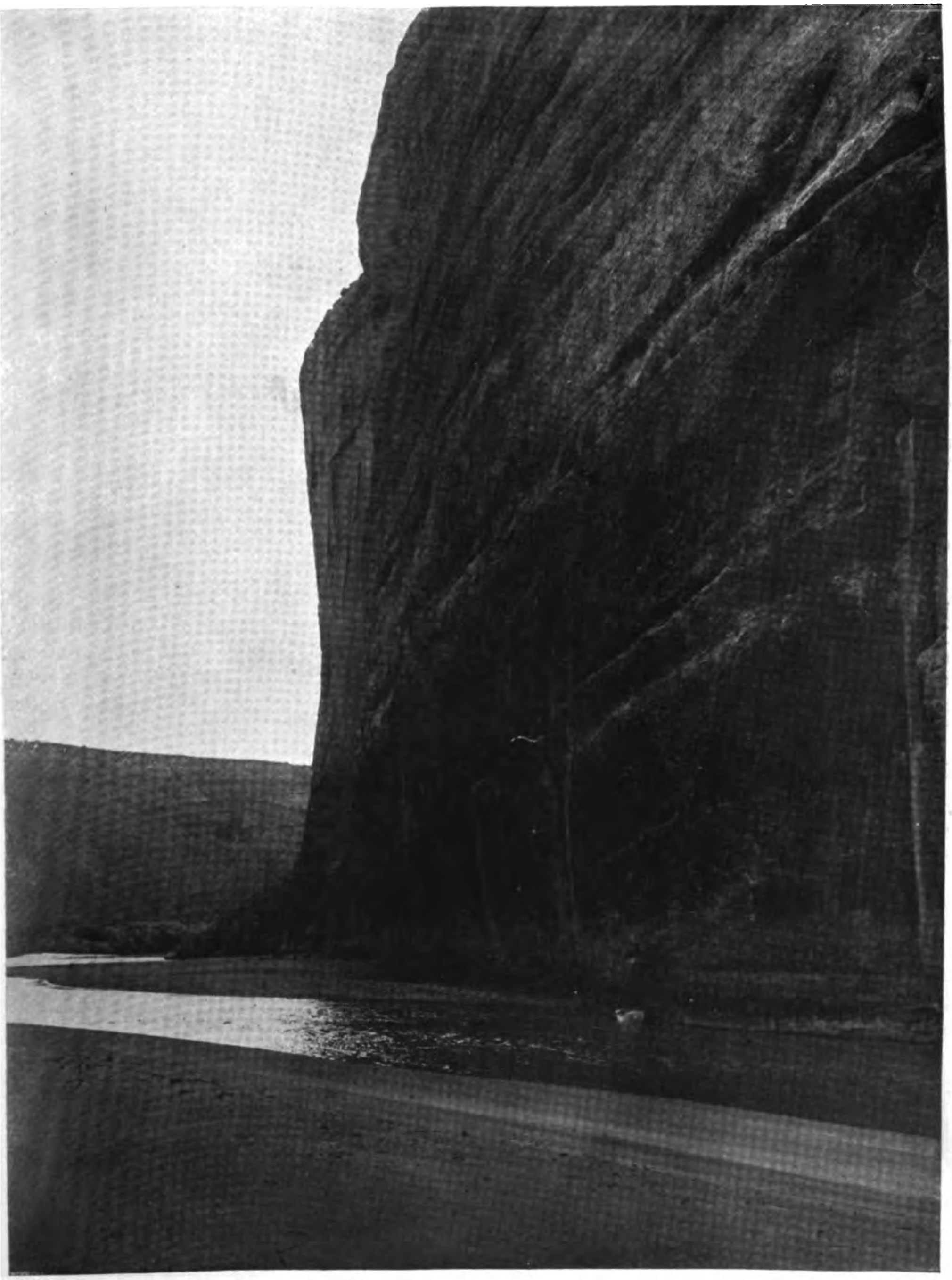
This was our chance to get a motion picture; so I set up the camera and went to work, while the others worked with the boat. I was paying little attention to what they were doing. Suddenly I heard a call, and on looking up saw that my brother had been carried from his footing and was being swept down the rapid. Jimmie had been holding the line on shore until the end was reached, then was instructed to go above to the crossing and join me. There was not a moment to lose. I caught up a rope and ran down the shore, reaching my brother, when a rock stopped the boat for an instant. That film was finished as he climbed out over the rocks.

It was fortunate he got out at this place. At Lower Disaster Rapid the stream almost disappeared under an overhanging wall (see page 146). A string, with one end attached to a rock and thrown from the shore to the wall, measured less than 25 feet. The remainder of the stream, which had been 300 feet wide in the flat country above, went under that wall.

DANGEROUS RAPIDS

The next day we were not so fortunate. The *Defiance,* as my brother's boat was named, was thrown on her edge on touching a rock, and was held there by the swift-rushing river. My brother saved himself by climbing onto the rock. I was having some difficulty in a whirlpool below and could not see him, but knew that something was wrong when a rubber bag containing a sleeping-bag came floating down the stream. Jimmie had waded out in a pool at the end of the rapid and saved the boat. Ellsworth was quite close to the shore, and we soon had a rope and life-preserver to him and pulled him to shore. Every plank on the bottom of the boat was split, and as I had received a similar upset that morning we pulled out on shore for repair. We had lost our two guns in the last tilt. They were too long to go under the decks. The cameras had all been in the muddy water, likewise our provisions. Some of our motion-picture film was lost. We placed all of our material on the shore to dry, as we were enjoying a brief period of sunshine.

But it was short, for a deluge of rain, driven by a heavy wind, came sweeping up the canyon. We put up a small silk tent and got everything inside; but it was long after midnight when we retired, after having repaired all possible dam-



END OF LODORE

Photo by Kolb Brothers

Echo Cliffs, opposite the mouth of the Yampa River. This wall repeated an echo of a count from 1 to 7 when called from the shore of the Yampa. Note our boat under the cliff

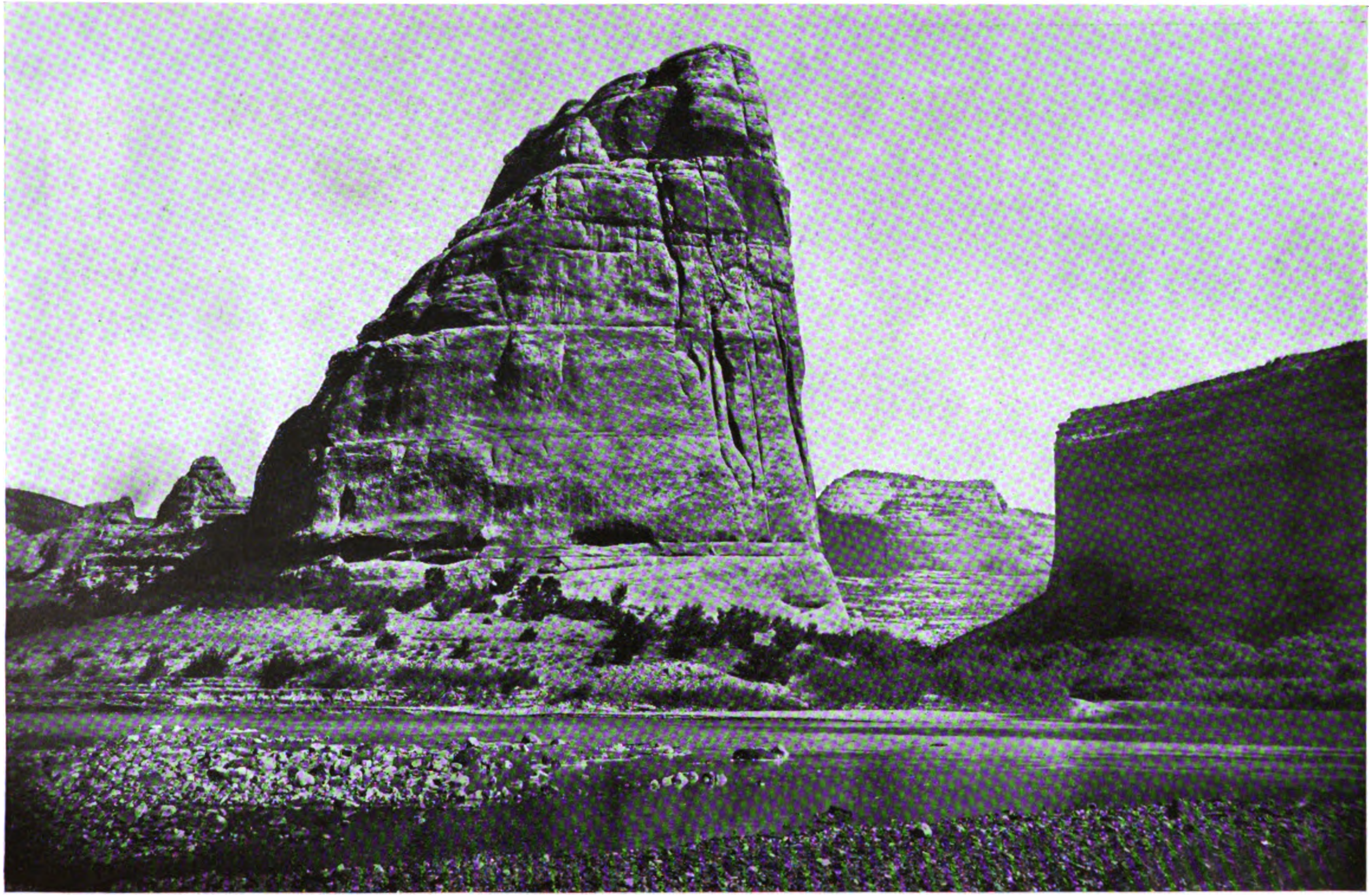
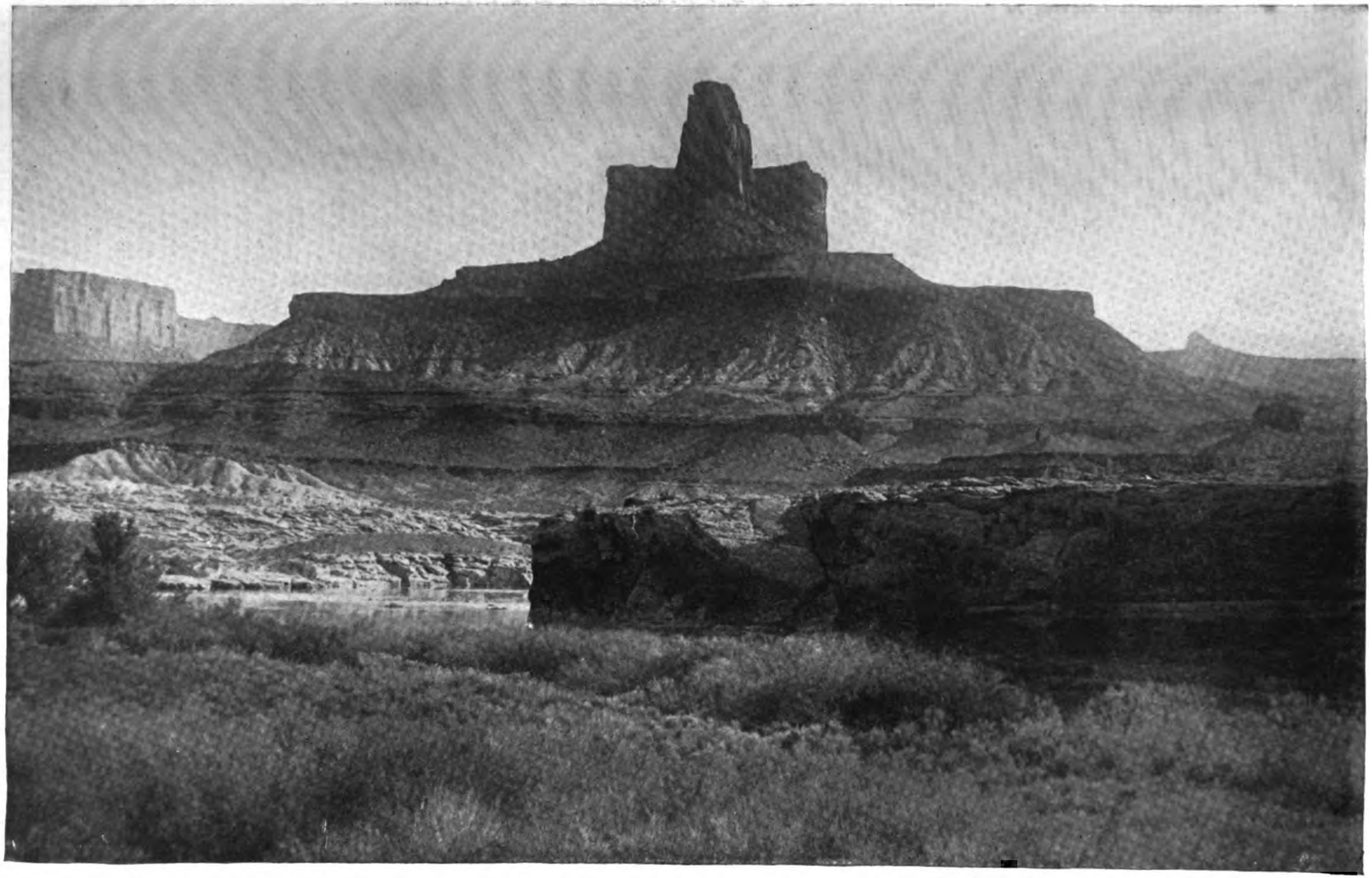


Photo by Kolb Brothers

ANOTHER VIEW OF THE END OF LODORE CANYON

Mouth of the Yampa on the right. Walls are about 700 feet high. The trees are red cedar



THE END OF THE LABYRINTH CANYON, SHOWING THE BUTTES OF THE CROSS Photo by Kolb Brothers

These two formations are about half a mile apart, and the cliffs are about 700 feet high. Few people know that motor boats make the journey in perfect safety, starting from Green River, Utah, for 120 miles down to the junction of the Green and Grand rivers; also 40 miles up the Grand, in canyons 1,300 feet deep. There are no rapids in this section. This is only one of many hundreds of wonderful rock formations which are found in Labyrinth and Stillwater canyons.

age. Landslides vied with the thunder, the wind, and the rain that night to add to our discomfort. And as we slept Jimmie rose up in his sleep and called, "There she goes over the rapids."

We awoke the following morning to find a 6-foot rise on the river. It was so muddy that fish were swimming on the top of the water, gasping for fresh water. We secured 14 by striking them with our oars. When suckers and catfish come to the top on account of mud in the water it is pretty bad. A test of the water showed that it contained 20 per cent of an alkaline silt. Afterward we found many dead fish, with their gills filled with this mud.

We had suspected Jimmie of homesickness for some time. This day he told us his story. He had an invalid mother, and he had always looked after the needs of the family, aided by an older brother. When the proposition of taking the river trip came up, serious objections were raised by the family; but when the ticket came he concluded to go, with or without their consent. Now he feared that his mother would not live, or that we would be drowned, and that he would be left on the shore and would be unable to get out. All this he told us with tears in his eyes. No wonder he felt blue.

We cheered him all we could, and told him we would send him out at the first opportunity.

RUNNING THROUGH LODORE

The last place of importance in Lodore Canyon had been named Hell's Half Mile (see pages 146 and 147). We thought it was all of that and then some. The entire stream was blocked by a lot of massive rocks, flung from the cliffs above in riotous confusion. This had happened at a point where the descent of the river was the greatest yet encountered. On the left side the barrier of rocks was crowned by a giant cottonwood once washed down on a flood, with its roots extending over the foaming torrent, which whirled and tore through every crevice between the rocks.

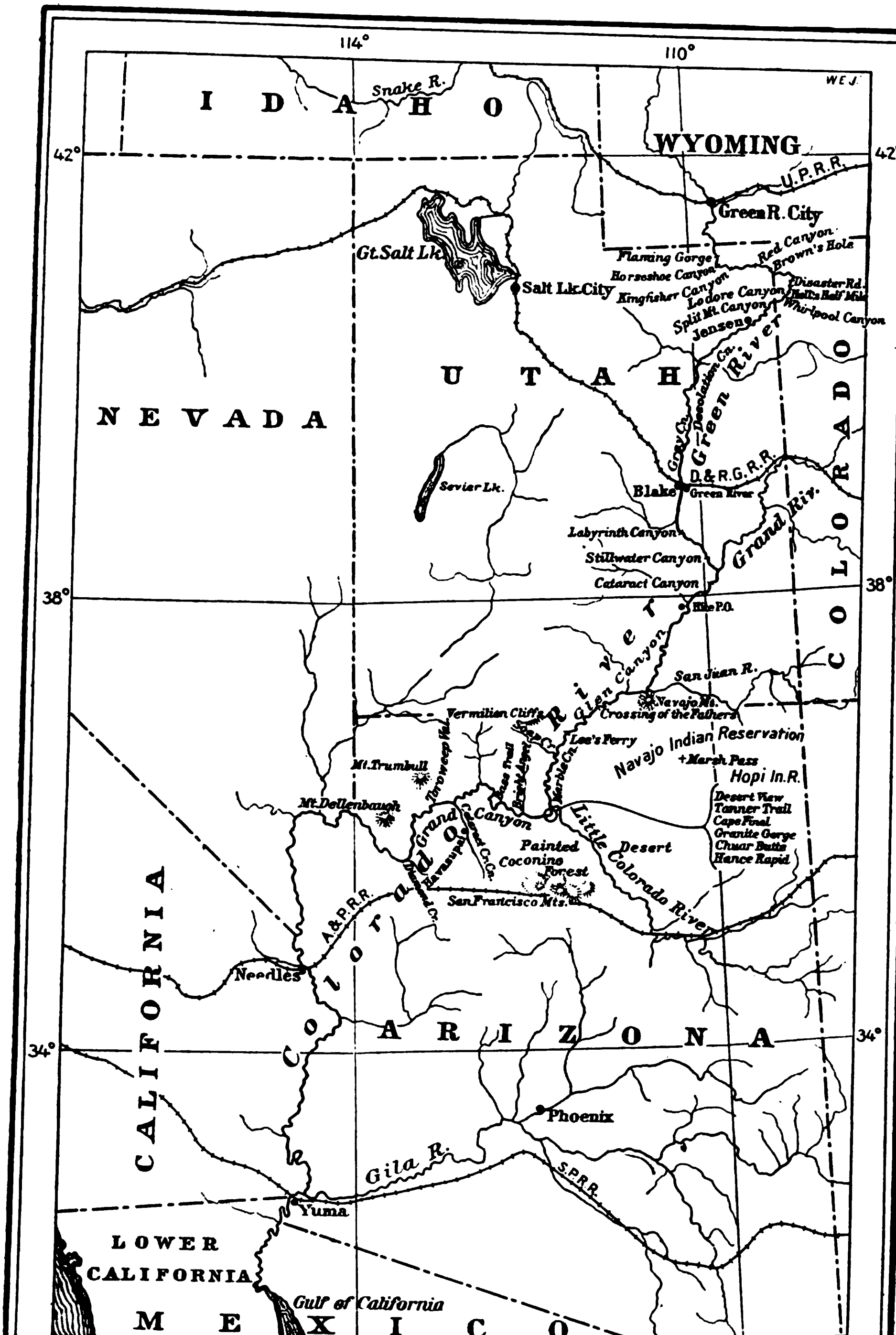
We carried all the weight from the boats high above the rapids, climbing over mud-covered boulders, dodging under scrubby trees, sliding down recently washed-out gullies, staggering under the weight of the loads. Many times we fell, bruising ourselves on the marble-like rocks. The recent rise in the river, which had now receded, had left a slime of mud over these rounded boulders. Our clothes were torn to tatters. It took 18 loads to empty the boats.

Carefully inflating our life-preservers and adjusting them, we then went to work on the *Defiance*. Our other experiences at working past difficult rapids were as child's play when compared with this. At first, where the rapid was less violent, we lined the boat from the shore, or I rowed, pulling upstream, dodging here and there, while my brother held the line on shore, dropping her down as each threatening rock was passed. We struggled to retain our footing when standing, waist deep, in the water below protecting boulders, as we lifted the stern over a submerged rock, then slid the boat forward (see pages 146 and 147); she would balance a moment, the bow would shoot into the air, then fall down with a thud and another rock was passed.

WHEN SECONDS COUNT

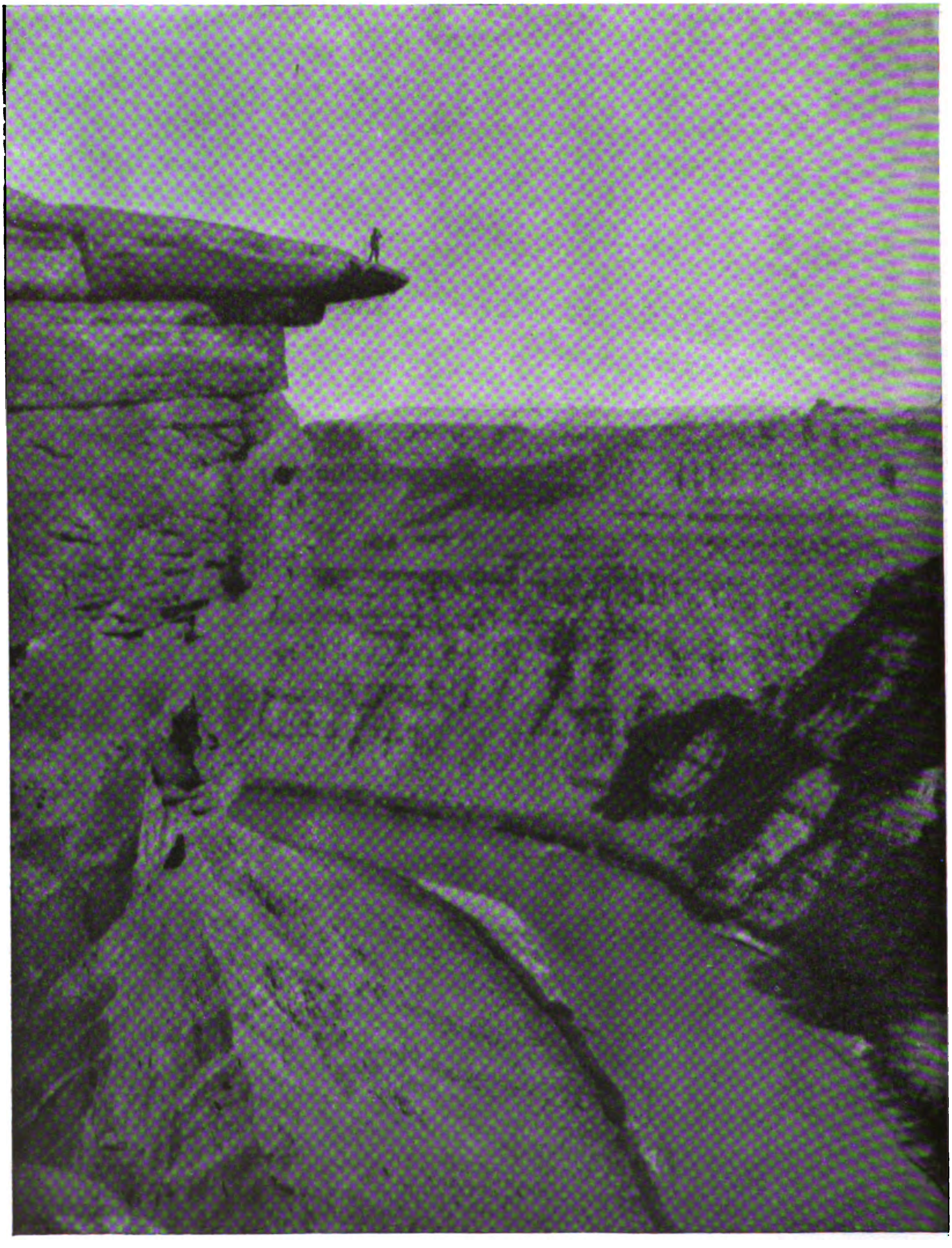
The slightest miscalculation would mean a wrecked boat; the least misstep would plunge us into the torrent. The life-preservers would have been of little use there. The rocks would soon batter one into insensibility. Even in less violent water the heavy sand collecting in the clothes soon sinks a swimmer, and a body once taken down in that manner seldom rises to the surface.

When we came to the barrier, we concluded the only way to pass this in safety was to nail skids to an upright log which we found wedged between two large rocks at the end of the cottonwood tree. Both the log and the tree seemed to have been placed there for our convenience. In all this work there was only room for two, so we made use of this opportunity to get a motion picture—the last we were to get with Jimmie's assistance. During the breathing spells we would look up and find he was forgetting to turn the crank. We would call to him, then all



114°
110°
W.E.J.
Snake R.
IDAHO
WYOMING
42°
U.P.R.R.
Green R. City
Flaming Gorge
Horseshoe Canyon
Red Canyon
Brown's Hole
Gt. Salt Lk.
Salt Lk. City
Kingfisher Canyon
Lodore Canyon
Disaster Rd.
Hell's Half Mile
Split Mt. Canyon
Whirlpool Canyon
Jensen
Desolation Ca.
Green River
UTAH
COLORADO
NEVADA
Gray Ca.
D.&R.G.R.R.
Blake
Green River
Sevier Lk.
Labyrinth Canyon
Grand Riv.
Stillwater Canyon
Cataract Canyon
38°
Hite P.O.
Glen Canyon
San Juan R.
Navajo Mt.
Crossing of the Fathers
Vermilion Cliffs
River
Lee's Ferry
Navajo Indian Reservation
+ Marsh Pass
Hopi In. R.
Mt. Trumbull
Toroweep Val.
Mt. Dellenbaugh
Bass Trail
Bright Angel
Marble Ca.
Grand Canyon
Colorado
Havasupai
Cataract Cr. Ca.
Diamond Cr.
Little Colorado River
Painted Desert
Coconino Forest
Desert View
Tanner Trail
Cape Final
Granite Gorge
Chuar Butte
Hance Rapid
San Francisco Mts.
A.&P.R.R.
Needles
CALIFORNIA
ARIZONA
34°
Phoenix
Gila R.
S.P.R.R.
Yuma
LOWER CALIFORNIA
Gulf of California
MEXICO
114°
110°

MAP OF GRAND CANYON FROM GREEN RIVER, WYOMING, TO MOUTH OF COLORADO, IN MEXICO



SCENE IN THE STILLWATER CANYON **Photo by Kolb Brothers**

The man is standing 1,300 feet above the Colorado River below (see text, page 157)

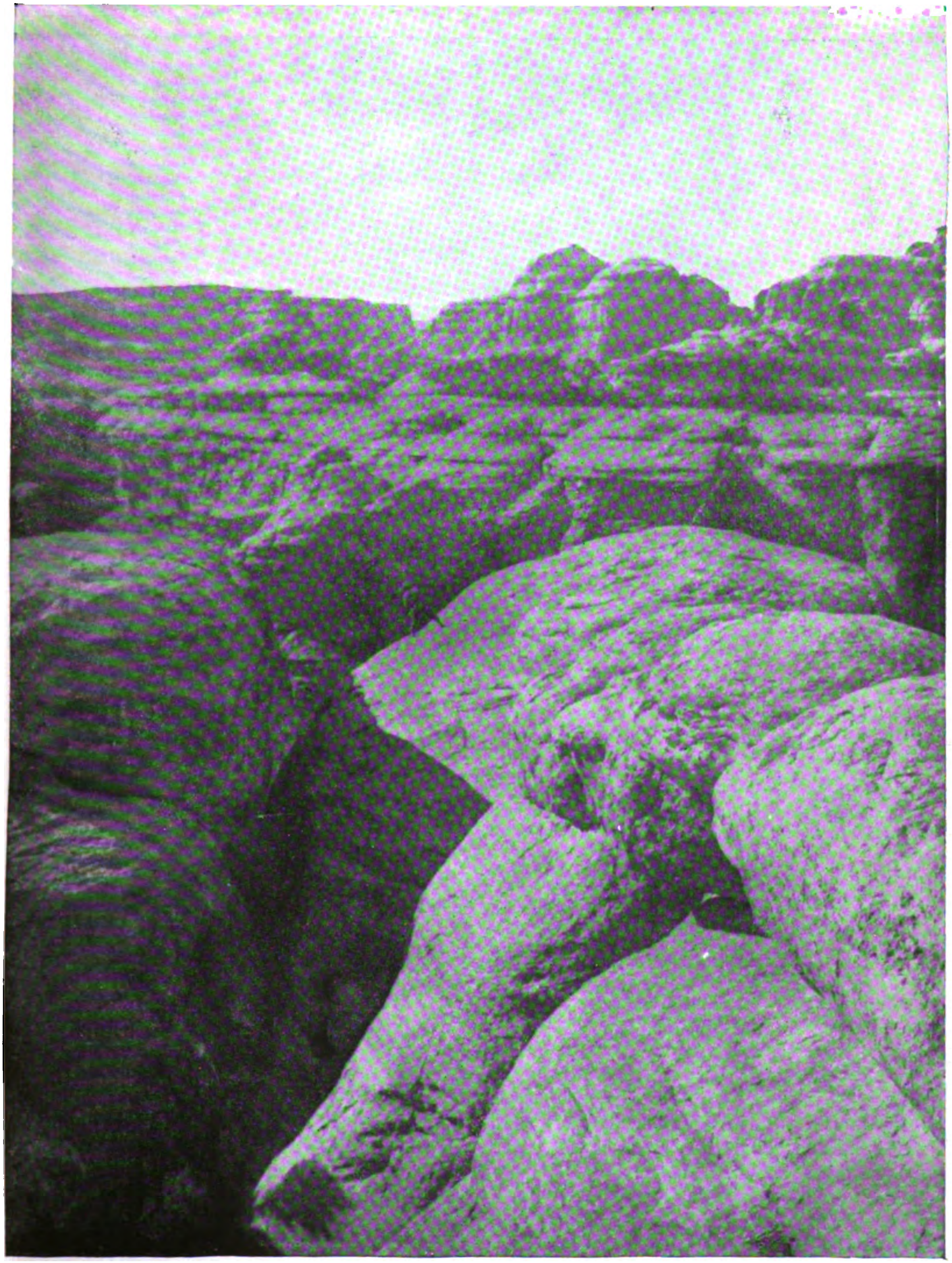
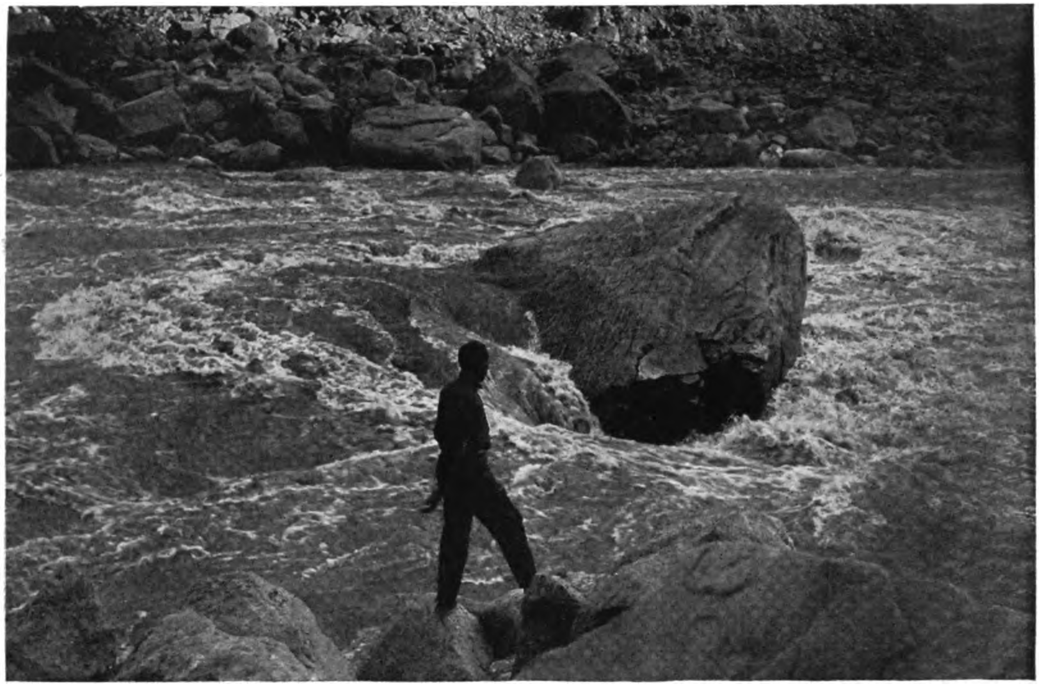


Photo by Kolb Brothers

THE LAND OF STANDING ROCKS ABOVE THE JUNCTION OF THE GREEN AND GRAND RIVERS

The rocks here are split and cracked in every conceivable manner. Some of the cracks were 300 to 400 feet deep. There was little or no vegetation. Apparently this condition extended for great distances in every direction across the Colorado; far away were great spires of rock looking like a city of churches. Stillwater Canyon (see text, page 157).



A TYPICAL RAPID IN CATARACT CANYON Photo by Kolb Brothers

This type of rapid was very common in Cataract Canyon. The river falls 75 feet in three-fourths of a mile in this section. Our boats were carried up on this rock, then reversed and whirled through the narrow channel on the right. The picture gives no idea of the drop or the violence of the water. There are records of nine parties who have lost their lives in this 41-mile canyon. If a boat is wrecked and the occupants are not drowned and succeed in climbing up the walls of the canyon, they find themselves in the desolate country of the Land of the Standing Rocks (see pictures, pages 154 and 155, and text, page 161).

would go to work again. We kept the boat in the water as long as possible, its bouyancy helping a great deal, as we lifted only one end at a time. Again we lifted the stern of the boat, then threw the rope from the bow over the root of the tree and tugged away until she was balanced on the skids. She was slid carefully forward, tipped slightly, then with a rush like that of a vessel on a greased runway she shot into the pool below, almost breaking away into what remained of Hell's Half Mile.

At the end of Lodore Canyon we found a small cabin occupied by an old man. Rumor had it that he was living this hermit's life because he had engaged in a shooting scrape or two, and had been quicker than the others in pulling his gun. He was harmless enough when we found him, as he was feeble and childish. He had been in this section when Major Powell was making his survey, and had many interesting stories to relate of the early days. The disappointing thing about the stories was that he would never finish them, but would break off in the middle of his narrative and begin on something else.

What interested us all more than anything else was that the Chew ranch was on the plateau above. When we arrived we found that Mrs. Chew had crossed the mountains and joined her husband and sons. When she saw us she exclaimed, "Why, boys, I thought you had passed here a week ago." It had taken us eight days to get through 20 miles in Lodore Canyon, so you know we had some trouble. The river descends 425 feet in that short canyon.

THROUGH EASTERN UTAH

The Chews said they were going to Jensen, Utah, 40-odd miles away, on the following day, and gladly agreed to take

Jimmie along. We were going to the same place by river. We traveled through Whirlpool and Split Mountain Canyons in two days' time, just four hours behind Jimmie. We saw him off on the stage the next day, a very happy boy, bound for the railroad, 120 miles away. We sent some of our photographic material along with him, knowing it was in the best of hands.

Two more canyons—Desolation and Grey—had to be traversed before we reached the D. & R. G. Railroad. This is the point where Stanton and Brown, with their party, began their survey for a railway through the canyons of the Colorado. Mr. Brown and two of their companions were drowned in Marble Canyon above the Grand Canyon.

Stanton, undismayed by these reverses, re-outfitted with heavier boats and completed the journey to the tidewater. Later it was the starting-point of the prospecting expedition composed of three men—Russell, Monnette, and Loper. Records have been kept of nine other parties who have left this place for the passage through Cataract Canyon. Three men only escaped. The others simply disappeared.

LABYRINTH AND STILLWATER CANYONS

Few people know that parties are taken by motor boat down the Green River to its junction with the Grand, and part way up the Grand, and then by automobile to the railway. We have no doubt but that some day this will become a popular way of seeing these wonderful canyons. All element of danger from rapids is removed from this 150-mile trip. Some of the scenery en route might be compared to the Garden of the Gods, but on a scale a thousand times greater and a thousand times more picturesque (see pages 151 and 154).

At the junction of the Green and the Grand rivers we climbed out through a side canyon above Cataract Canyon. It was "The Land of Standing Rocks," a country split, eroded, and cragged in every conceivable manner. There was little soil and scarcely any vegetation. The weird solitude, the great silence, the grim desolation seemed to affect us here more than at any place on the trip. We could drop rocks into the crevices, and watched them disappear into the darkness far below us. On going to the edge, 1,300 feet above the Colorado River, we would find some of the rocks overhung 50 feet or more.

JUNCTION OF THE GREEN AND THE GRAND RIVERS

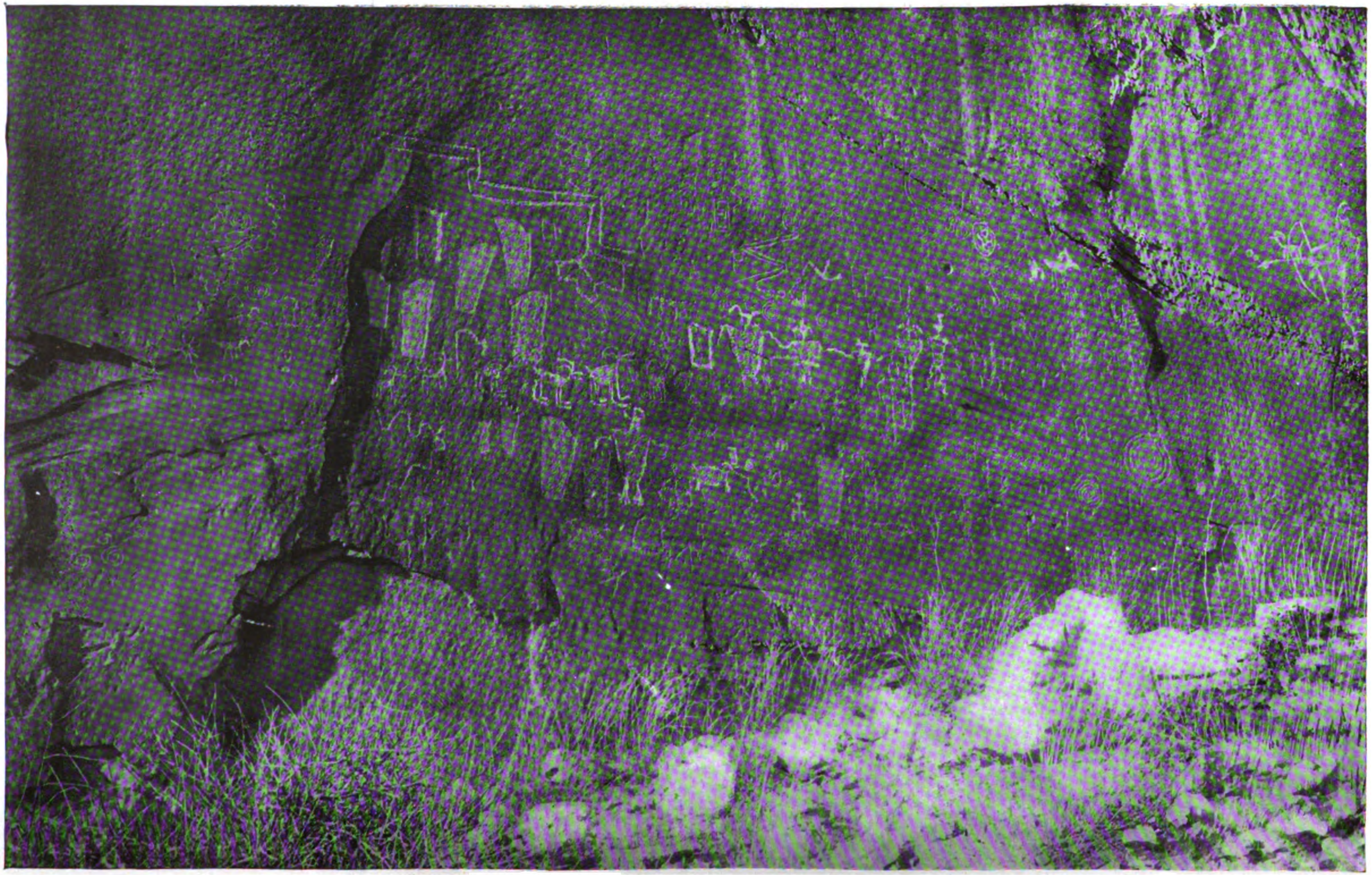
In Cataract Canyon's 41 miles there are 45 bad rapids, and there must have been at least that many men who have attempted its passage and were never heard from again. We know one man who did climb out after losing his boat, and who existed for weeks on cactus and herbs until he was finally discovered. He is an able-bodied man today, but has practically lost his reason.

The Colorado River at this place was ten times greater than the Green in the upper canyons, and the rapids were correspondingly more dangerous. We were surprised to find here tracks of some person who was ahead of us.

That evening we caught up with the man who had made the tracks we had seen. He gave the name of Smith, admitted rather reluctantly that he was trapping, and did not appear greatly pleased to see us. Considering the fact that we were 150 miles from the last habitation, this struck us as being rather strange.

GOING IT ALONE

It was too late to go any farther that evening; so, as there was plenty of room, we camped below him and invited him over to share our evening meal. After dessert, which happened to be some pineapple which we had kept for some special occasion, he became more sociable. He had started from Green River, Utah, one month before, he told us. He had an old, rotten boat that one good wave would knock to pieces. He had made no attempt to run any of the twelve rapids we had passed that day, but held his boat with a chain and worked down in that manner. Once he had been dragged into the river, twice the boat had been upset; he was engaged in drying out his tobacco



ANCIENT PICTOGRAPHS IN GLEN CANYON

Photo by Kolb Brothers

Note the mountain sheep on the arrow. The figures near the center may represent a dance somewhat similar to the masked dances of the Hopi. The large figures on the left, we are told, represent a stone last on which they wove a sandal. The spiral indicates water. The quiet waters of Glen Canyon were quite a rest after the torrents above. We found here many evidences of ancient Indians, who had reached the river through the side canyons.

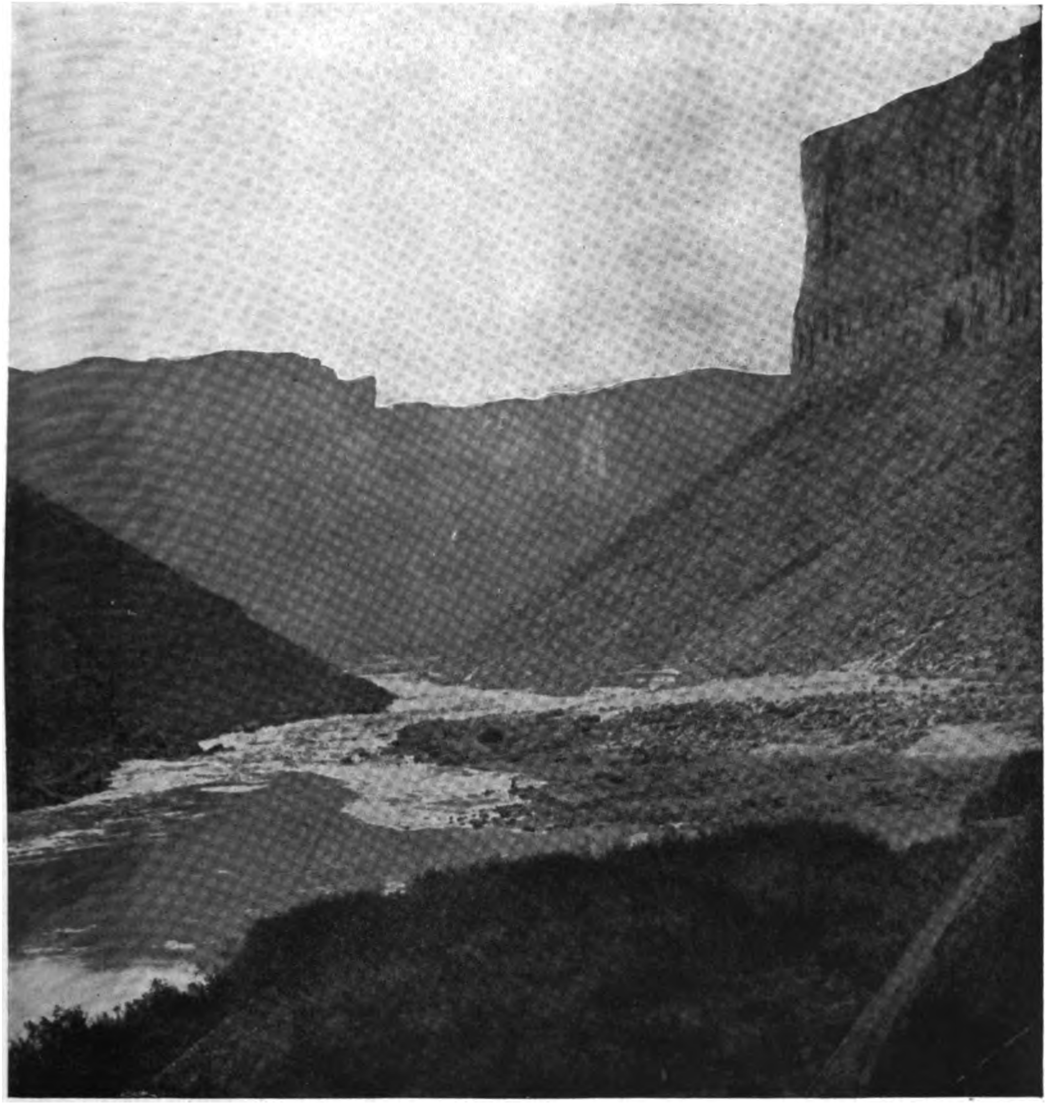


Photo by Kolb Brothers

ABOVE THE SOAP CREEK RAPID, IN MARBLE CANYON

The scene of two of our upsets. Note figure on the right shore (see text, page 162)

when we found him. This was the only thing that seemed to worry him. He seemed to have no idea of the country below, but thought it was getting better. We told him what we knew of it, and, on the following morning, offered to take him through with us and help him with his boat, but he declined. It almost seemed like suicide to us. On parting he promised to write to us if he ever got out of Cataract Canyon.

As we proceeded on our journey we wondered more than ever if he had not made a serious mistake in attempting it alone. The rapids increased in violence and frequency; the walls drew closer together and towered above us until they were over 2,000 feet high; there was small chance to climb out. At one point the river descended 75 feet in three-fourths of a mile. We had so many narrow escapes ourselves as we ran these rapids that we temporarily forgot all about Smith and his troubles.

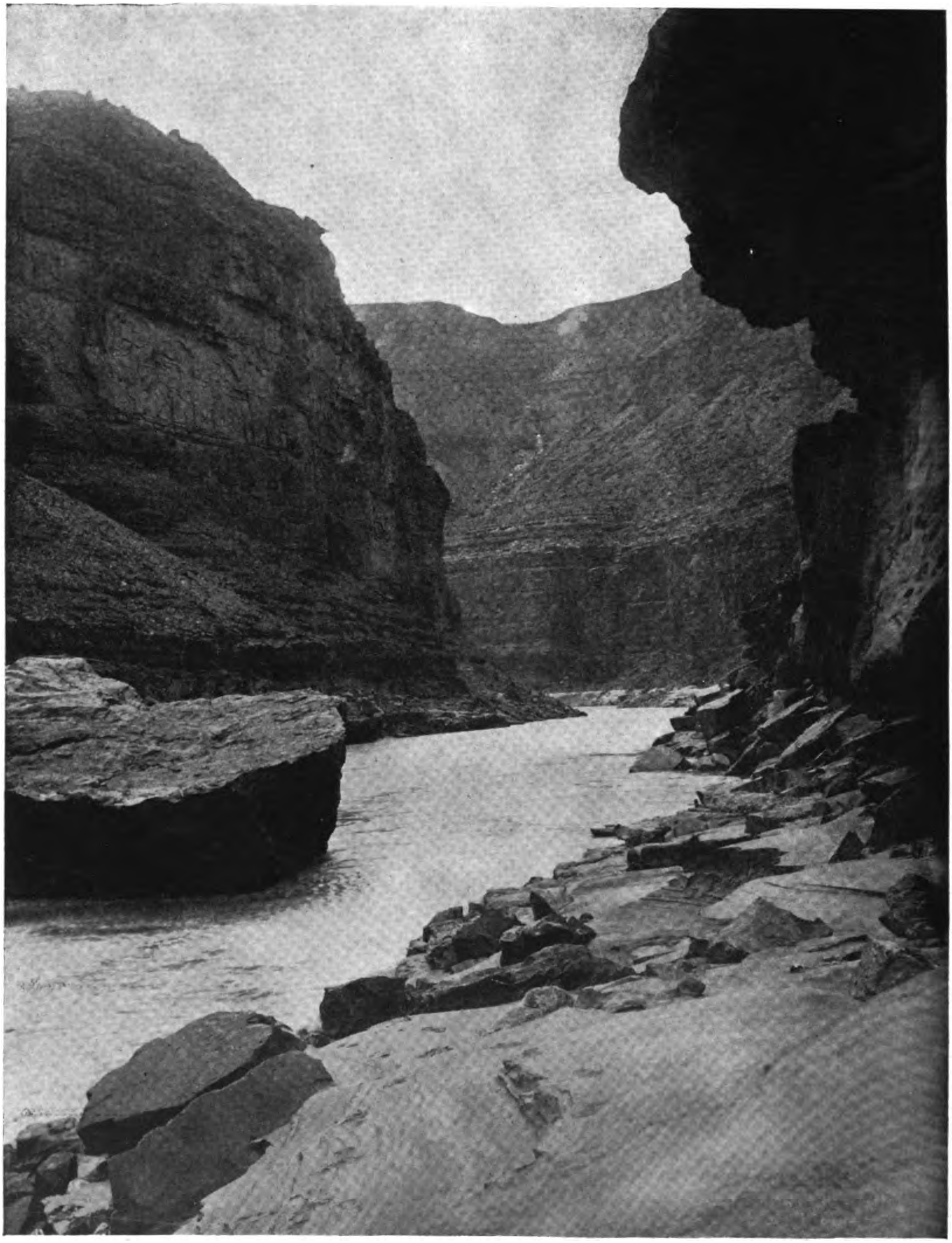


Photo by Kolb Brothers

A FALLEN ROCK IN THE UPPER PART OF MARBLE CANYON

Note the boat on the right-hand shore just emerging from behind a rocky point

DARK-ROOM DIFFICULTIES

We put up our small tent and camped at one place for two days, not only because I was not feeling well, but we wished to develop some plates and films as well. For this work our dark room, or tent, was hung inside the other tent, and we proceeded with our work just as though we were at home—300 miles below us. We settled the mud in a bucket of water by placing the bruised leaf of a prickly pear cactus in the vessel. A substance which oozed out settled the mud and made the water sufficiently clear to develop our plates. A hole dug in the sand at the side of the river gave us water for cooking purposes, nearly as clear and in greater quantities than the method first mentioned.

Rapid number 23 was just below this camp; it was one of the biggest drops of any in that section. We made moving pictures of each other in turns as the boats reeled and plunged over the cresting waves. We each had an extra oar knocked from our boat in this rapid, but recovered them a mile down stream in a whirlpool.

PHOTOGRAPHING AN UNRULY SUBJECT

The walls increased in height until they towered nearly 3,000 feet above us, the left wall being nearly perpendicular. To prevent our minds from dwelling too much on the dangers which surrounded us, we proposed having a little sport. The two boats were placed stern to stern and lashed together. My brother sat in the first boat and rowed down-stream. I sat on the deck behind with my legs wrapped around the bow, holding the moving-picture camera down with my chin, turning the crank with my right hand, and clutching at the hatch cover with my left hand. In this way we passed over two small rapids. My brother said that the best picture would have been of myself as I rode the bucking boat over the turbulent water. This method was never tried when in the larger rapids.

The last rapids in Cataract Canyon were the worst of all in some respects. The walls went sheer from the river on one side; the shore had almost disappeared from the other. Great boulders had dropped down and blocked one side of the channel. Twelve-foot waves overtopped and threatened to engulf us as we rowed into this rapid, carefully pulling away from the dangerous places.

But one danger was no sooner avoided than another jumped up before us. In the last rapid the shores disappeared altogether. An island lay in the middle of the rapid, but the stream on the left was entirely blocked with rocks. The white water swept under the right wall until it surged into a lot of fallen rock; then it crossed to the opposite side and swept it clean. The rapid was much in the shape of the letter S.

We rowed into this without stopping to look it over. First we pulled against the current, keeping close to the island, matching our strength and skill with the water which tried to drag us into the turn. This danger past, we pulled across the swift-running center, 6 or 7 feet higher than the water along the shores; then the opposite side was avoided in the same way, and we landed, breathless, on a shore below the rapid and proceeded to bail out with a grocery box which we kept under the seats.

Then our thoughts reverted to Smith. What would he do when he came to this rapid? The only escape was a narrow, sloping ledge beginning some distance above the rapid and reaching a height of 60 or 70 feet above the water at the lower end of the rapid. It would be possible for him to climb over this with his provisions, but the idea of taking his boat up there was entirely out of the question, and, poorly equipped as he was, an attempt to run it would only end in disaster. The breaking of an oar, the loss of a rowlock, or the slightest knock of his rotten boat against a rock, and Smith's fate would be similar to that of others whose bones were buried in the sands.

OTHERS WHO HAVE TRIED

Below Cataract, in Glen Canyon, we came to the Hite ranch and post-office, the first sign of human habitation for 175 miles, since leaving Blake, Utah. Mr. Hite had kept a record of the parties who had attempted Cataract Canyon and were never heard from again. On one occasion a man staggered into his door and fell to the floor. He said his companion was drowned, and that he had eaten nothing for a week but a horned toad and a lizard. Whether this was true or not, he was in a critical condition, and it was some time before he was able to go out across the mountains. Hite promised to advise us if Smith ever reached there alive.

The quiet waters of Glen Canyon were quite a rest after the torrents above. We found here many evidences of ancient Indians, who had reached the river through the side canyons. We found several ruined cliff dwellings, with broken pottery and arrow heads scattered about. There were strange pictographs of masked figures and of deer and mountain sheep on the walls (see page 158).

Glen Canyon was filled with many curious rock formations, including arches and caves. It is in this vicinity that the natural bridges of southern Utah are found.

It is not far from this point that Rainbow Natural Bridge was recently discovered. We thought we knew where it was and searched long and earnestly for the side canyon, but we had passed it before starting to look for it. It was a great disappointment, for we had been told it was only six miles from the river. We consoled ourselves with the thought that we would make the journey overland at some later day to reach it.

PATHFINDERS

In the middle of Glen Canyon we came to an old ford, known as the Crossing of the Fathers. Early in the fifteenth centry Spanish priests had taken the Indian trails leading to this ford and had crossed over into Utah. Thus this section was visited before the English settled on the James River; yet how much does the American public know about it today?

While climbing out here we heard some hammering and blasting, but we traveled 15 miles down the river before we discovered what had caused it. We saw the strange sight of a half-built steamboat in the mouth of a little side canyon, with cliffs rising six or seven hundred feet above it. Between 15 and 20 men were at work putting it together. This boat was to be used to carry coal and driftwood to a placer dredge working at the head of Marble Canyon, 20 miles farther down the river.

We reached the dredge that evening. This was at Lee's Ferry. Thirty-odd men were at work here, 120 miles from the nearest railroad. They shook their heads and told us of the great boulder-filled rapids in Marble Canyon, which they had seen from the cliffs above.

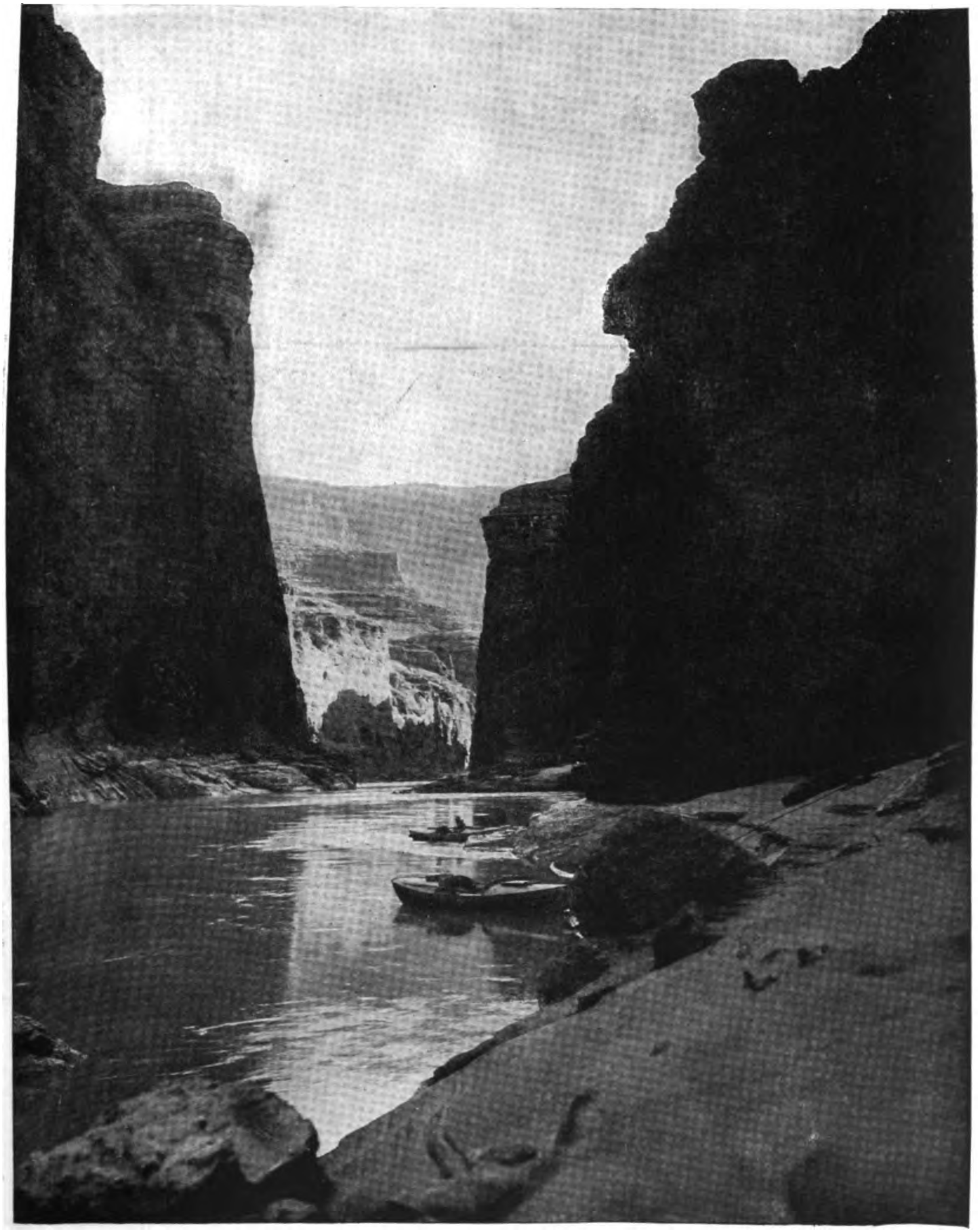
"GET THE PICTURE FIRST"

We had traveled less than one day below this place when we came to the famous Soap Creek Rapid (see page 159). It was just below this rapid that Mr. Brown had lost his life. My brother wanted to run Soap Creek Rapid, and suggested that I should make a motion picture as he came down, keeping a rope and life-preserver close at hand, so that I could run to the end of the rapid in case of an upset. His last instructions were: "If we upset, get the picture first."

I confess that I was shaking at the knees as he went back to prepare for the plunge. The rapid was a third of a mile long. I had set up the camera about 50 yards below the first dip. It seemed a long time before he came in sight above the rapid; but when once in its grip it was not more than a second or two before he was opposite me, pulling with every ounce of strength to avoid the one rock that blocked his passage.

For a moment it seemed that he would gain his goal; then the *Defiance* was lifted suddenly by an unexpected wave; she touched the rock for an instant and turned on her edge, then broke loose and turned upright again. The entire upset had occupied less than two seconds.

I lost sight of my brother when the boat went over, but felt reassured on seeing him hanging to the gunwale and climbing in again as the boat righted herself. He scrambled for the oars, and brought her around just in time to avoid being taken into a cresting wave. The filled boat had lost her buoyancy and struggled through the foaming water. Time and again she disappeared from



THE SHEER WALLS OF MARBLE CANYON Photo by Kolb Brothers

The walls in the foreground are about 900 feet high; those in the distance are nearly 3,500 feet high

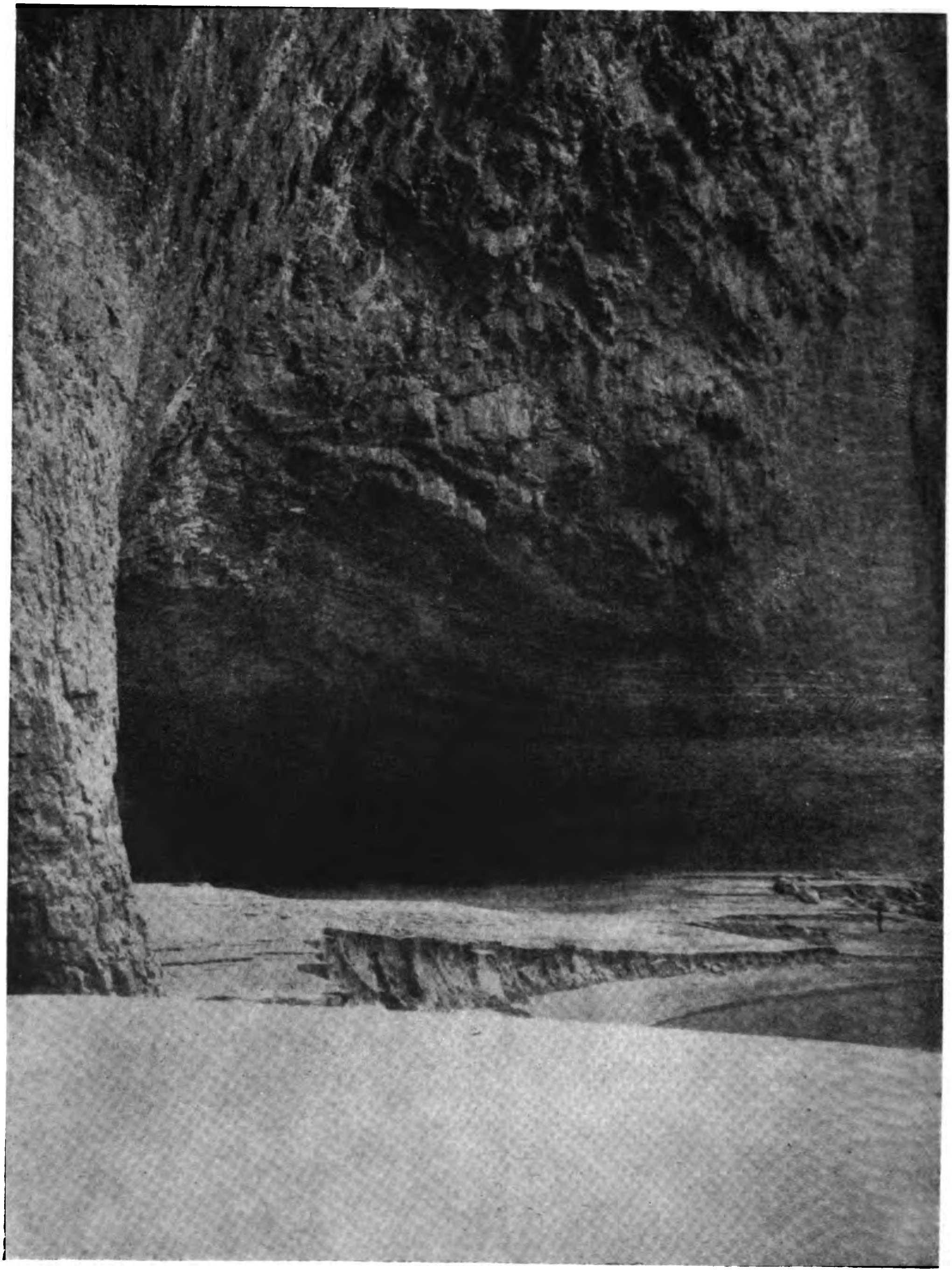


Photo by Kolb Brothers

A HUGE CAVE IN MARBLE CANYON

Compare with the figure of a man standing on right, near edge of the picture

Photo by Kolb Brothers

AN AIR MATTRESS IN CONNECTION WITH A SLEEPING BAG GAVE US A LIGHT, DRY, COMFORTABLE BED, EVEN ON WET SAND OR ROCKY, UNEVEN GROUND

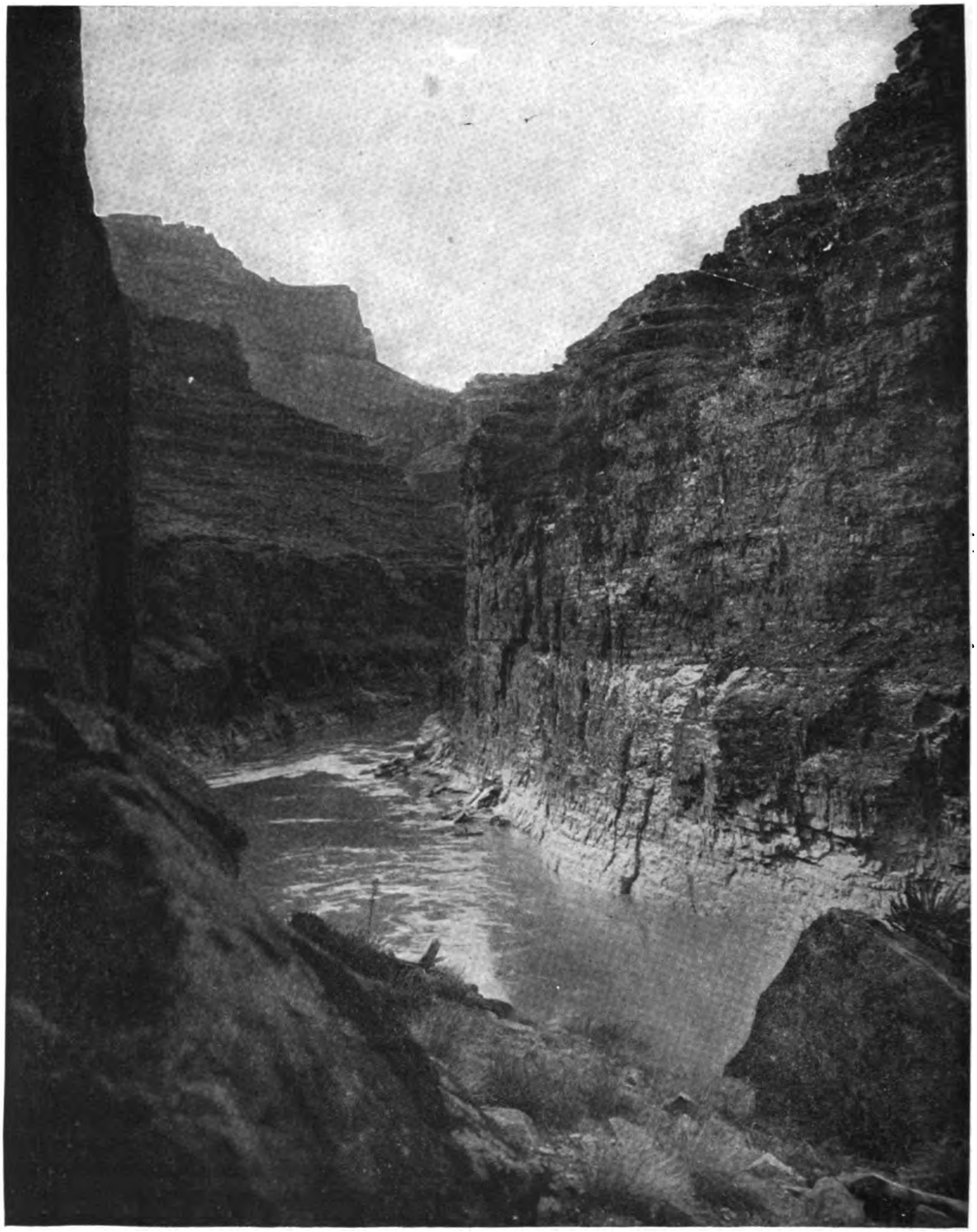
sight, and I wondered if she would sink; but with the rhythm of a pendulum she rose each time she fell, getting smaller and smaller in the distance until the end of the rapid was reached.

"Did you get the picture?" This was my brother's question, and one which I found myself unable to answer. I knew that I had the start. I was just as certain that I had taken the long run after he had regained the oars, for I had carefully followed him, looking through the finder, but had no idea what I was doing when the boat upset.

My brother was still determined to run the *Edith* through, feeling sure that his first passage gave him the experience necessary to handle it successfully. I advised waiting until morning, for it was now getting late in the day; but he said "he would sleep better with the rapid behind us, instead of having to run it on the following morning, and with one boat below the rapid I could save him if it came to the worst."

While he walked back to the *Edith* I built a fire, then returned to my station in the *Defiance*. It seemed that he would never come. Finally he appeared above the rapid and paused an instant before making the plunge. It was now in the gloaming and this was indistinct, but I could make out that he had missed his channel and was carried into a vortex of contending waves. He disappeared for an instant; then the bottom of the boat, stern first, was shot out of the water and fell over, upside down. This was all I could see.

Boat and all apparently had disappeared. I launched the *Defiance* and waited. Soon a dark line appeared rising on the waves. It was the bottom of the *Edith*. I listened, but if there was any call it was drowned in the roar of the water. The boat was gradually drawing nearer and I prepared to save her, having made up my mind that a dark object in the middle of the stream was my brother on a rock.



IN LOWER MARBLE CANYON Photo by Kolb Brothers

Note the boat near the right side. A number of the rapids had no beach whatsoever on either side

ACROBATIC PHOTOGRAPHY

Drawing close to the *Edith*, I heard a strangled call, and saw that he was hanging to the boat. A life-preserver was floating ahead of him and he was calling to me to save it. In a moment I was at his side and was pulling him into the *Defiance*. Then we caught the upturned boat just as we were carried into the next rapid, the rapid which had proved to be the last for Brown.

There was no time to turn the boat upright, so we held to the rope to save her as she dragged us on and on into the darkness. It was a hard pull, but I made it, and kept clear of the overhanging rocks under which the current ran. But the *Edith*, filled with water, kept us from making the landing, and a mile of swift water was passed before we pulled into an eddy and tied the boats to a boulder.

The lower end of Marble Canyon held many curious grottos; in places the walls were honey-combed with caves. Some of these caves made excellent camping places, for the flood waters had been into them and had deposited a level floor of sand. Driftwood was piled up at the mouth of one of them, and a spring of water bubbled from the rocks not far distant. Although it was early in the afternoon, we could not resist this invitation to camp, for it was snowing on the heights above and a cold wind blew up the canyon. The only disturbing element at this place was the roar of another rapid just below.

When lying in our beds the noise made by the water was terrific, and we would imagine we heard all sorts of impossible things, such as crying children, women screaming, and the shrieking of the wind. On rising up in our beds it would once more be the roaring of the rapid. We could plainly hear the rolling of rocks as they turned over and thumped against one another.

The walls of Marble Canyon fell sheer for hundreds of feet in many places, the gorges at these points being very narrow (see pages 163, 164, 166). In one place we recorded a high-water mark 107 feet above the low water on which we were traveling.

IN THE GRAND CANYON—THE SIGNAL FIRE

One week after leaving Lee's Ferry we were at the Hance Rapid in the Grand Canyon. This was the beginning of the abrupt and violent rapids of the granite gorge. This rapid was run in safety, but not without some exciting experiences. Then came a series of rapids which differed from those we had found above. The rapids we had been traversing were usually caused by the debris from side canyons, which dammed the stream and transformed what might have been a good, swift stream with a continuous drop to a succession of mill ponds and cataracts. In most cases in the low water the deposit made a shore on which we could land and inspect the rapid from below.

But the rapids in the granite gorge were different. They were not caused by any great deposit of rock, but rather seemed to be formed by a single narrow dike or ledge, rising from the bottom. The rapids dropped almost like a dam, then tailed out in long lines of interference waves. Had it not been so cold, this style would have been more to our fancy. The descent was abrupt, but careful handling of the boat took us past every danger. There was little chance to make a portage in any of those rapids had we desired to do so, which we did not.

We gave them but a glance, then rowed into them. One had a fall little short of 35 feet. The next was even more abrupt, and dropped about 30 feet. We paused only to bail out after each rapid, then pulled on again.

In five hours we had dropped 178 feet. We never paused in our rowing until we anchored under the tramway, and prepared to go up Bright Angel Creek and build our signal fire. When our last letter was sent out we had told them to begin to look for us about the fourteenth of November; it was now the sixteenth. We had some doubts if the fire would be seen on top, for storm-clouds filled the canyon; but now and then a rift appeared, and we hoped they saw the light.

Ragged and tired, but happy, we climbed the trail the next day to meet with a reception that repaid us for all

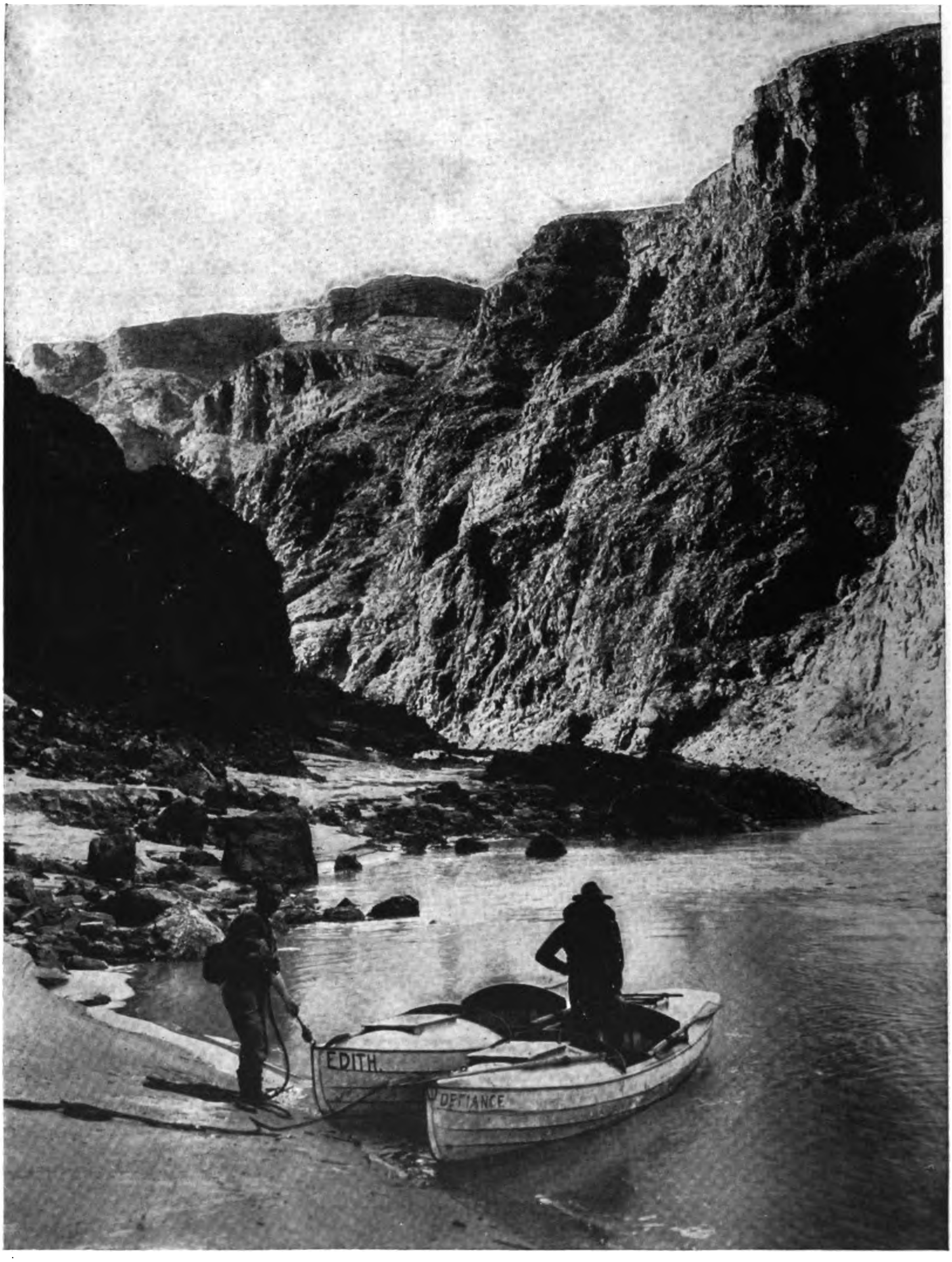


Photo by Kolb Brothers

We arrived at the end of Bright Angel Trail after two months and ten days on the journey through the canyons from Green River, Wyoming, a distance of 850 miles. "In five hours we had dropped 178 feet. We anchored under the tramway and prepared to go up Bright Angel Creek and build our signal fire. We had some doubts if the fire would be seen on top, for storm clouds filled the canyon: but now and then a rift appeared and we hoped they saw the light" (see text, page 167, and the next picture).

Photo by Kolb Brothers

WATCHING FOR THE SIGNAL FIRE

Seventy days after leaving Green River, Wyoming, we built our fire in Bright Angel Creek Canyon, signaling our home, six miles distant, on the opposite rim of the canyon, that we would arrive the next day. The fire was seen the instant it was lit by Mrs. Emery Kolb and her daughter Edith. With the telescope, our two forms could be distinguished sitting by the fire six miles away.

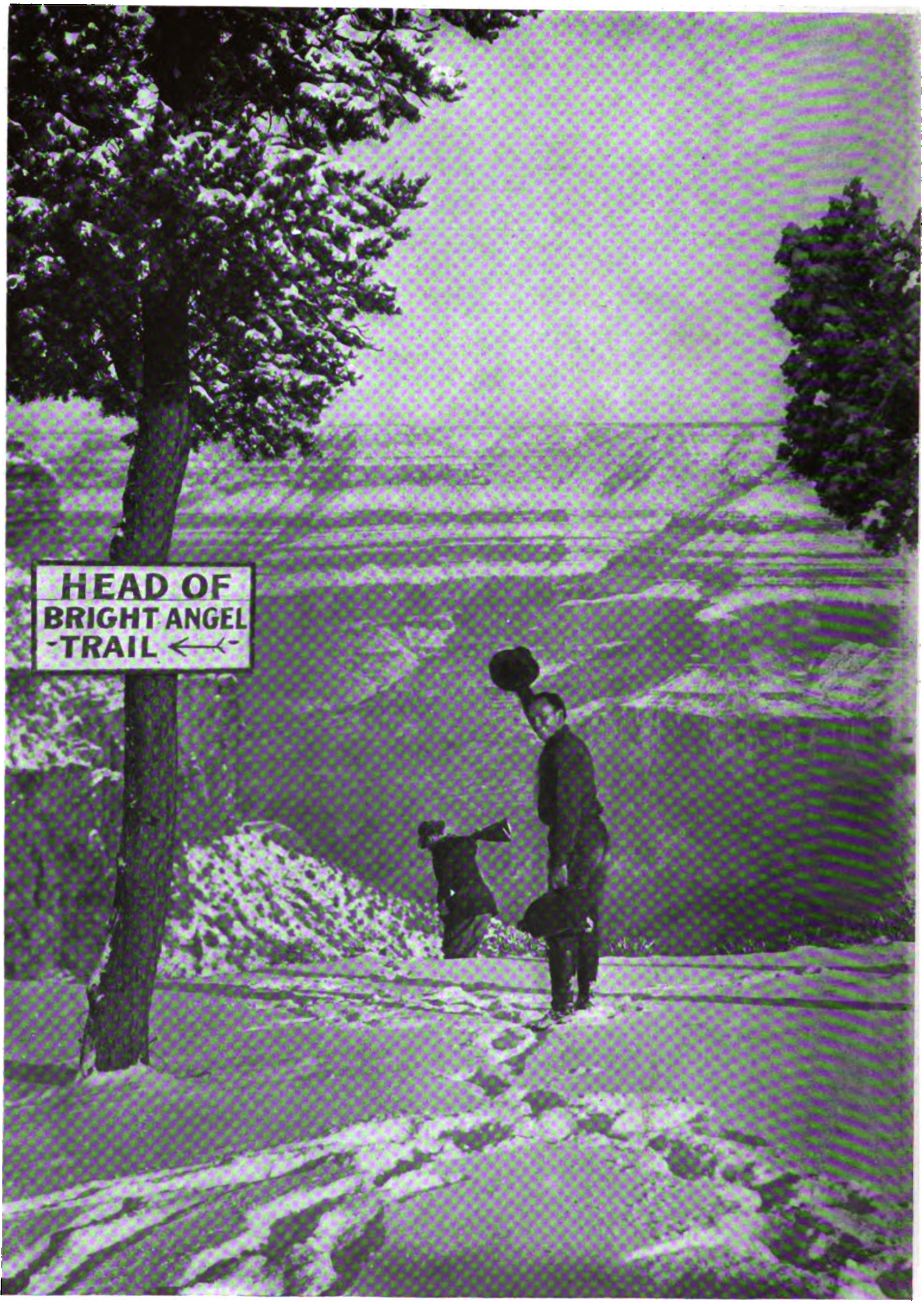

HEAD OF
BRIGHT ANGEL
TRAIL

Photo by Kolb Brothers

LEAVING HOME A MONTH LATER TO FINISH OUR JOURNEY DOWN THE CANYONS TO NEEDLES, CALIFORNIA

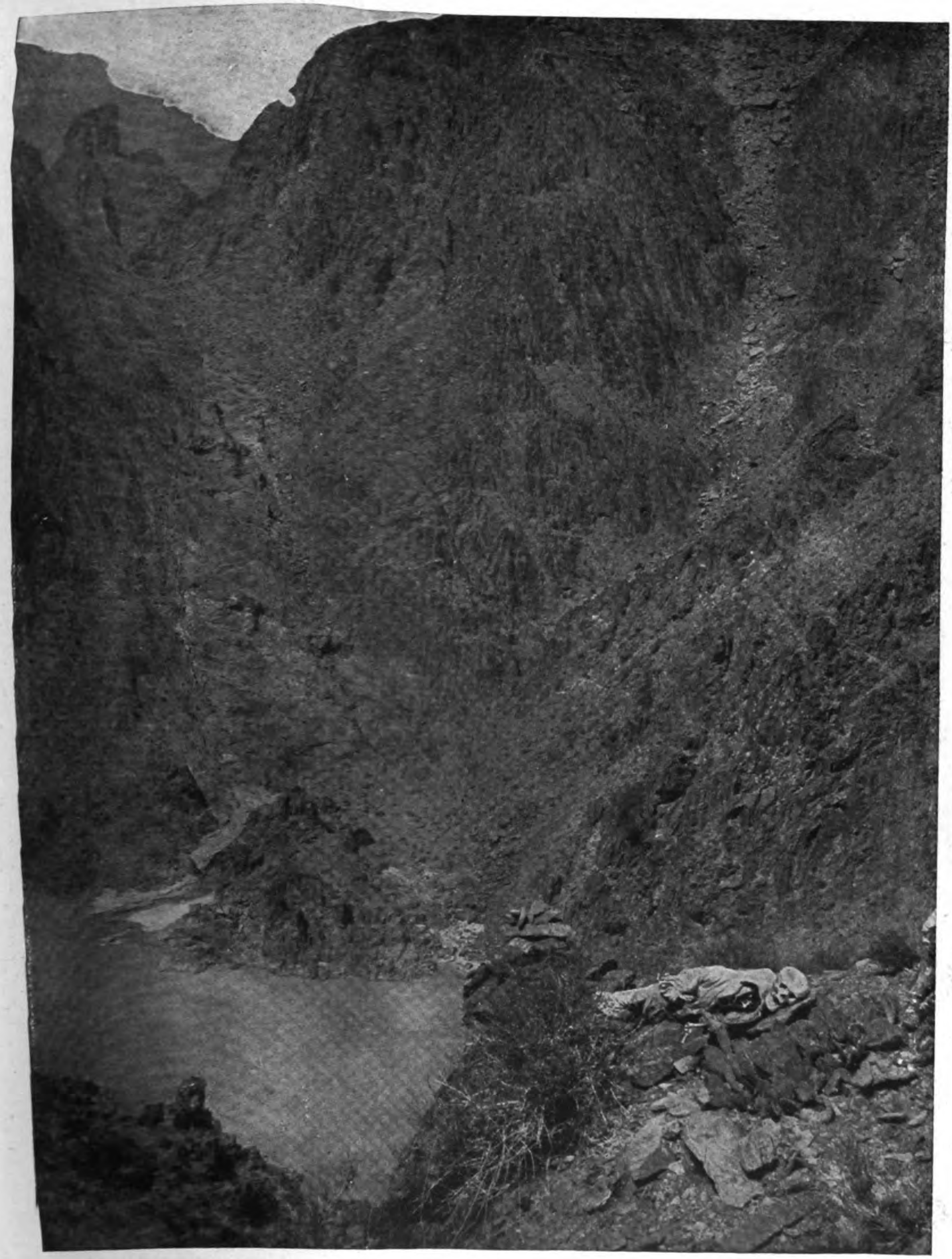
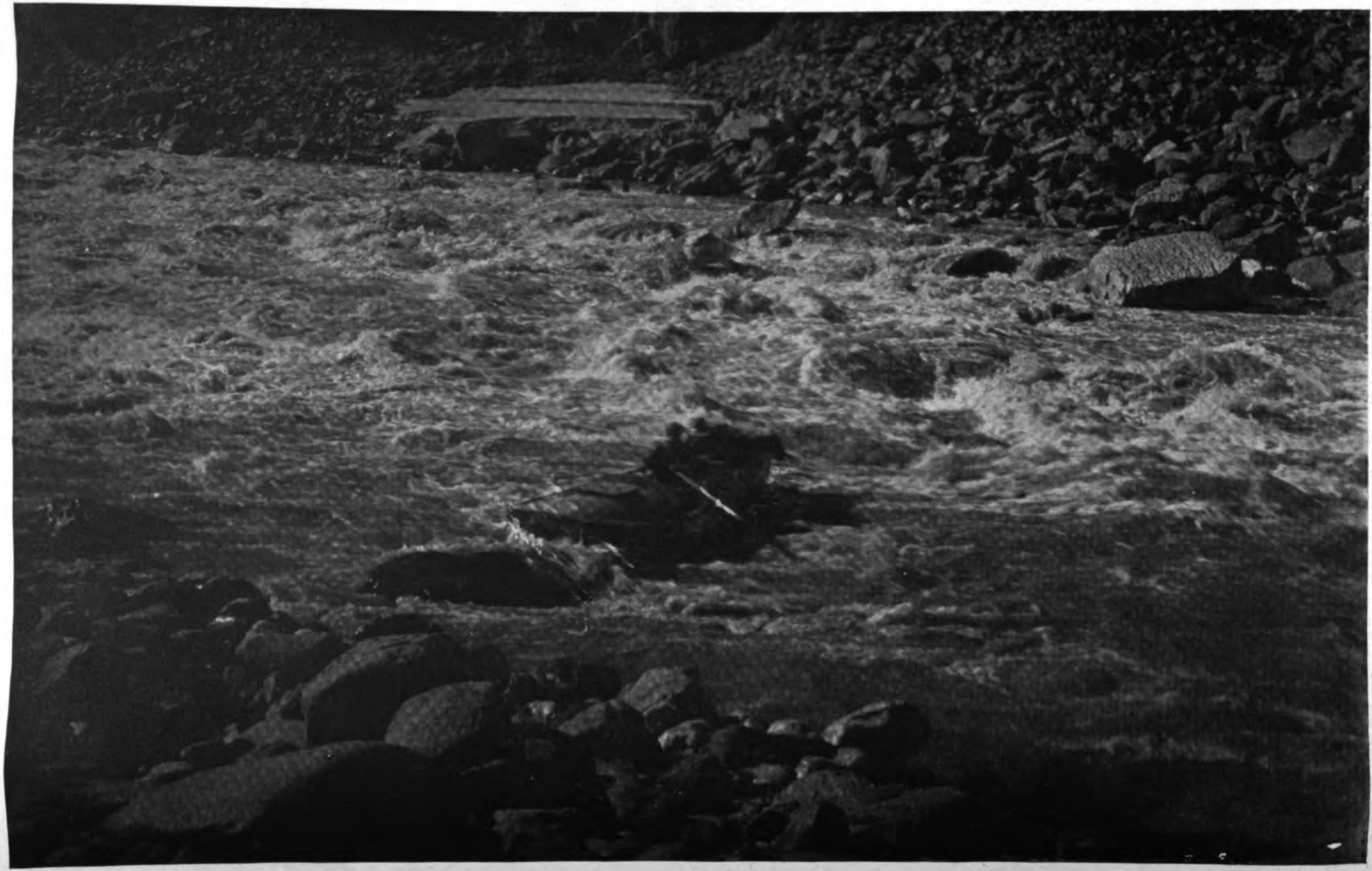


Photo by Kolb Brothers

THE FIRST CAMP FROM BRIGHT ANGEL TRAIL WAS BELOW THIS SKELETON, WHICH WE HAD HELPED COVER UP FIVE YEARS BEFORE

The body was lying in a natural position, with no large bones broken. The pockets contained a Los Angeles newspaper dated 1900 There was nothing about the clothes by which he could be identified. Apparently he was a prospector.



ONE MILE ABOVE TAPEAT'S CREEK: PULLING AWAY FROM THE SHORE

Photo by Kolb Brothers

Lauzon, "instead of walking around such rapids as he could while we ran the boat, would lie down on the deck, hanging on to the bulkhead like grim death as the great waves rolled over him. Then he would shake the ice-cold water from his clothes and with a grin would remark, 'Young fellows, wasn't that great!'" (see text, page 177). Our method in all rocky rapids was to drift down stern first, keeping the boat under control by pulling up stream or against the current. This gave the oarsman an opportunity to see what was ahead. The boats, being flat-bottomed and built with a rake or raise at either end, could be turned very quickly and pulled from side to side when rocks threatened.

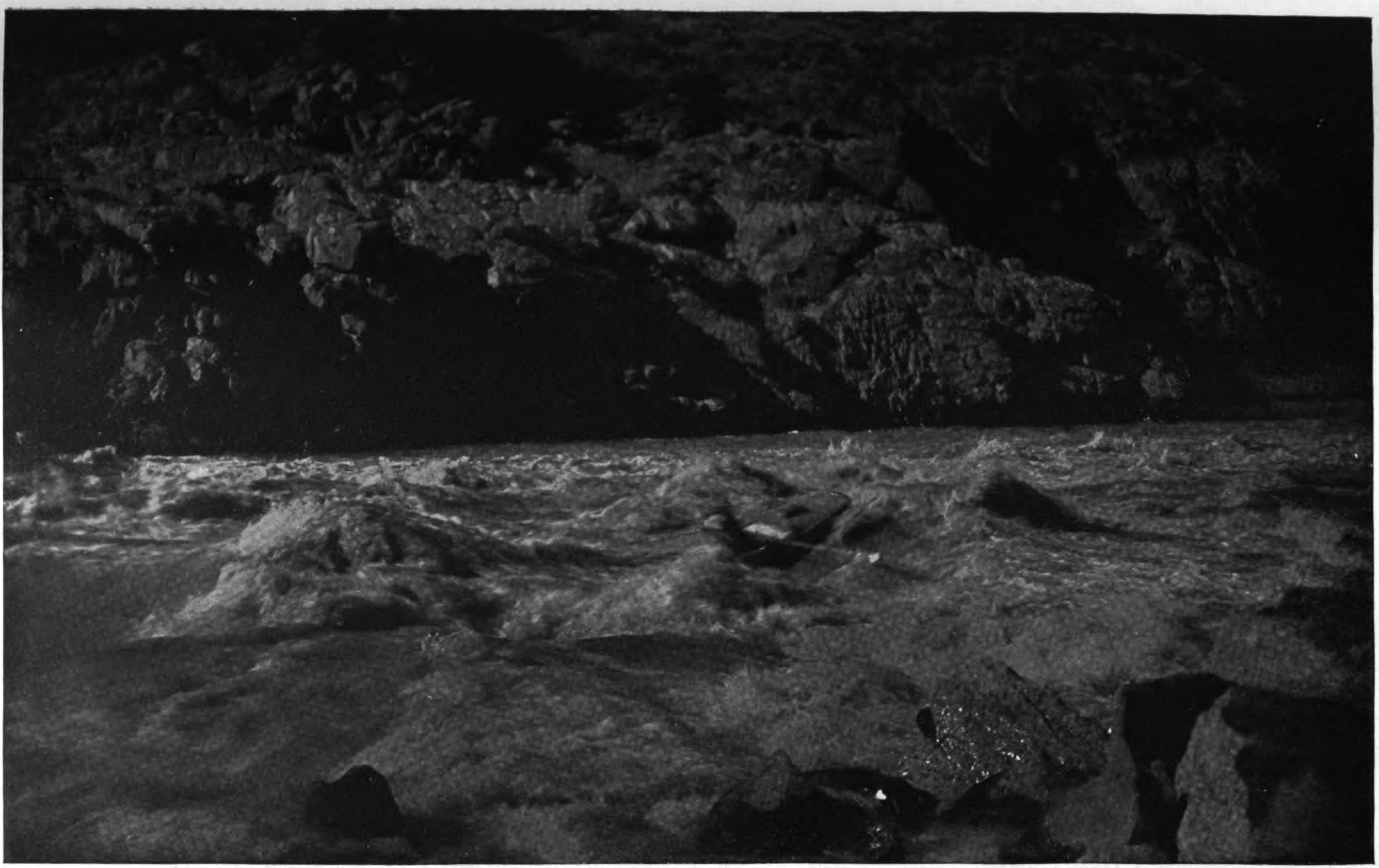
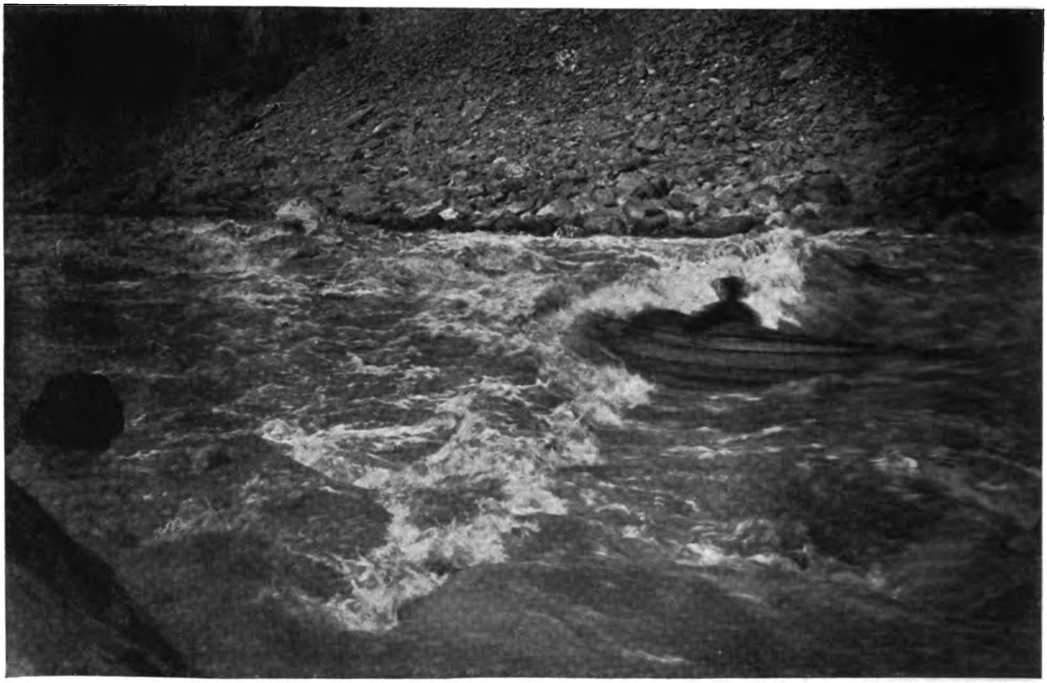


Photo by Kolb Brothers

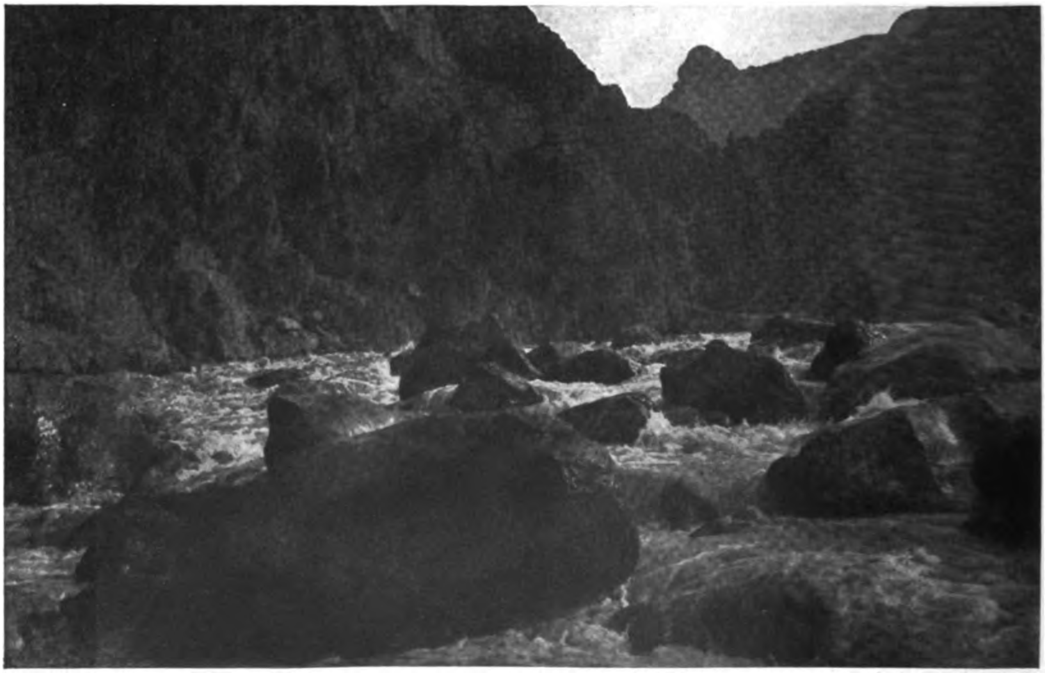
RUNNING A TYPICAL RAPID OF THE GRANITE GORGE

Such rapids are one-third to one-half of a mile in length. One can hardly describe the sensation of being catapulted along like a cannon-ball through such angry water



THE HERMIT CREEK RAPID, IN THE GRANITE GORGE

The wave on the right side is 15 feet high. Two parties have lost boats in this rapid

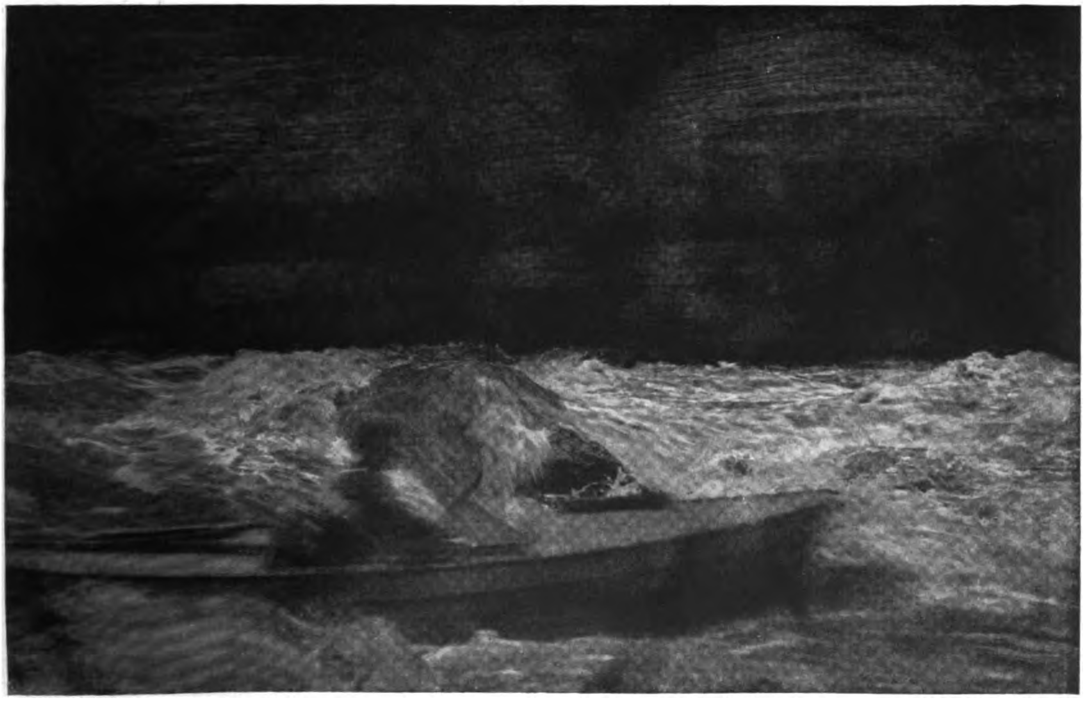


GRANITE FALLS

Photos by Kolb Brothers

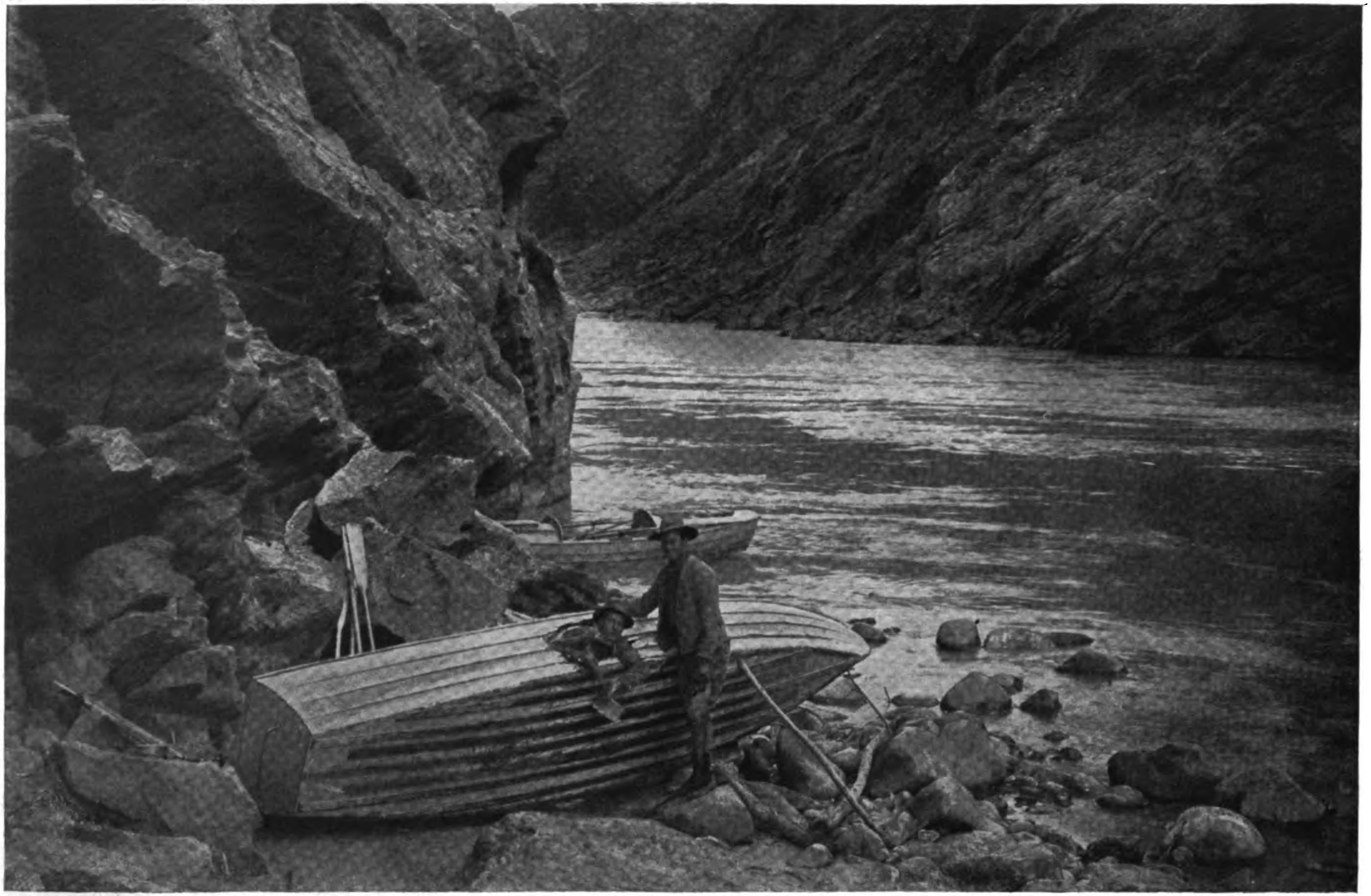
A violent descent. There is a boat in midstream to the left of the high rock in the center

A DIFFICULT RUN IN TAPEAT'S CREEK RAPID



Photos by Kolb Brothers

TAKING A SHOWER BATH: OVERHANGING WALLS IN THE HAVASU CANYON SECTION



AFTER THE ACCIDENT ON CHRISTMAS EVE

Photo by Kolb Brothers

The *Defiance* was overturned in a rapid above. Ellsworth Kolb, so weak from the battle in the ice-cold rapid that he could no longer swim, but kept afloat by life-preservers, was carried close to this point and crawled out, 20 feet above another rapid. Lauzon swam out from the opposite shore and saved the boat. The *Edith* was smashed while trying to follow the *Defiance*. Emery Kolb climbed the cliff on the left, but failed to see his brother, and thought he had drowned. Lauzon signaled him back as he was returning to his smashed boat. Rocks here are covered with a thin coating of ice (see text, page 179).

we had undergone. They were on the job, and saw the fire as soon as it was built.

One month later, or on December 19, we were ready to resume our journey (see page 170). It was with no great amount of enthusiasm that we left home to finish the trip to Needles, California. Nearly a foot of snow had fallen, and had drifted over the side of the canyon. The snow had descended to the plateau, 3,000 feet below—something unusual, occurring only after several nights of zero weather on the rim. A little thin ice covered the pools at the river's edge.

A RECRUIT JOINS US

With us was a new man who was anxious to make the trip—Mr. Bert Lauzon. Lauzon was a practical miner and a cowboy as well—an adventurous young man who had followed life in the open since his boyhood days—a typical product of the West. Our younger brother, Ernest, who had been looking after our business in the studio at the head of the trail, was also anxious to accompany us, and we agreed to take him as far as the Bass Trail, 25 miles below.

We soon saw that we were "tenderfeet" when compared with Lauzon. Instead of walking around such rapids as he could, while we ran the boat, he would lie down on the deck (see page 172), hanging on to the bulkhead like grim death as the great waves rolled over him. Then he would shake the ice-cold water from his clothes, and, with a grin, would remark, "Young fellows, wasn't that great!" Accustomed as we were by this time to the rapids, we failed to see any great amount of pleasure in having a ton of ice-cold water dumped down the back of our necks.

Our first camp was in a grewsome spot. Just above us, several years before, we had helped cover up the skeleton of a human being (see page 171). It was found midway between the river and the plateau, lying in a natural position. The man was dressed like a prospector, and wore hob-nailed shoes, while an overcoat was buttoned around him. His pockets contained Los Angeles newspapers dated May, 1900. There was nothing about him by which he could be identified. He may have been on the river and lost his boat, and starved. There was no indication that he had met a violent death.

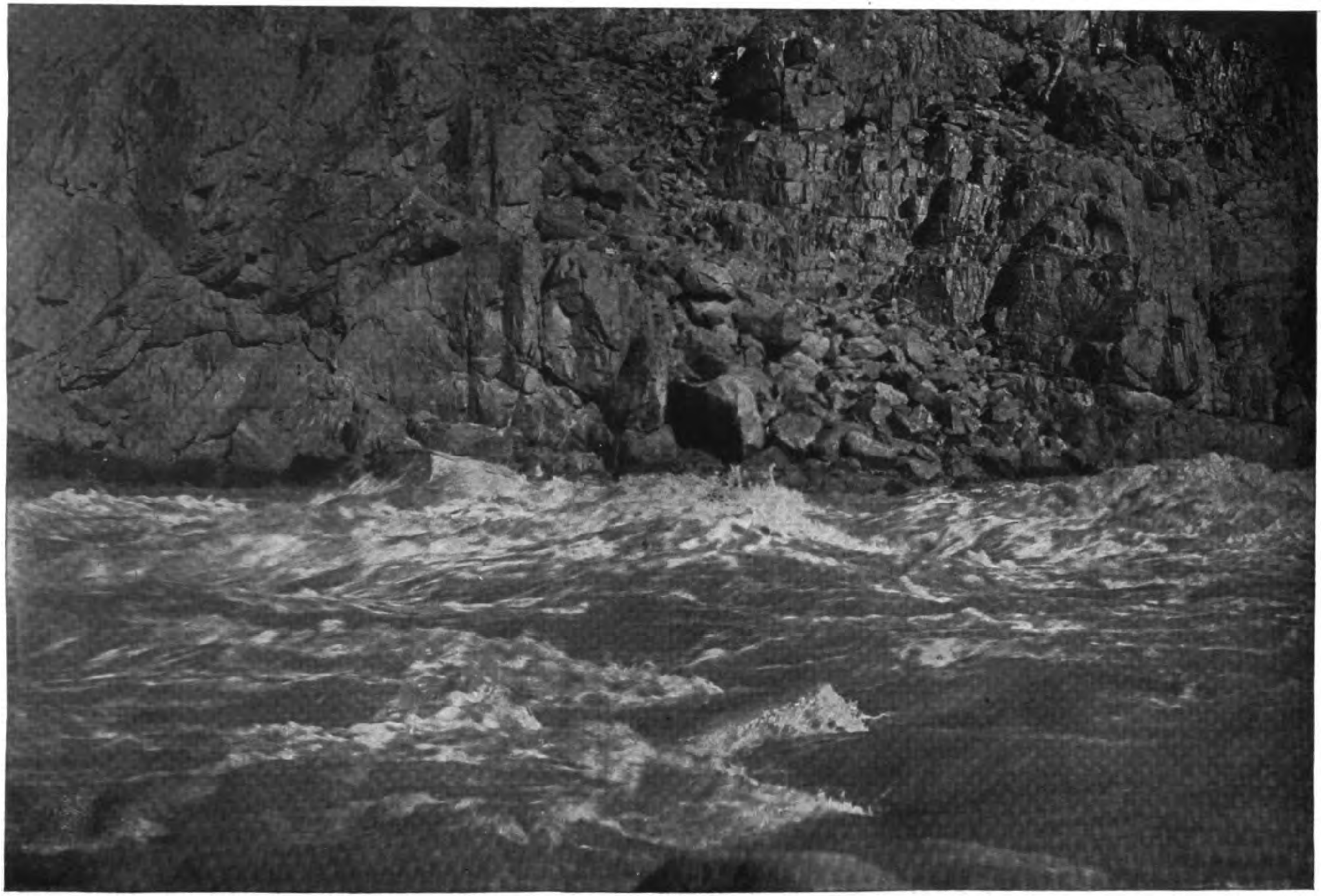
POOR CHRISTMAS PROSPECTS

It looked for a while, on Christmas Eve, that we would have a similar fate. Ernest had left us a few hours before (see pages 176 and 179), taking out our exposed plates via Bass Trail. A rapid was reached that looked bad, still we thought we could find a passage through. We had taken chances in rapids that looked worse, and came through unharmed; if we could run it, it would be over in a few minutes and forgotten an hour later.

Lauzon had gone as near the lower end of the rapid as he could, taking the left side, for a sheer wall of 60 feet rose from the water on the right. Ellsworth went first, taking a channel on the left. I had picked out another course on the right as being the least dangerous, but had no more than started when I found myself on a nest of rocks unable to move my boat. Other rocks were below, and the waves thundered about me.

About that time I saw my brother's boat caught sideways in a reverse whirl—as they are called by rivermen—water pouring over a rock and shooting underneath, while a 2 or 3-foot wave comes up the stream and is taken down also. The *Defiance* was held between the opposing forces—the one water pouring over the rocks, the other a wave equally as high on the lower side. Finally she filled with the splashing water, sank low, and the water pouring from above caught the 1,200-pound boat and turned her over as if she were a chip. For a moment she was held; then was thrown upright and forced out by the torrent. Ellsworth had disappeared, but suddenly shot up nearly a hundred feet below, only to be carried down again with every cresting wave. If he were to be saved it must be done instantly.

I knew he would take the same chance for me, so I pried the *Edith* loose with an oar and pulled with all my might, hoping to shoot past the rocks. I was



TYPE OF VIOLENT RAPID IN THE GRANITE GORGE Photo by Kolb Brothers

A boat can be seen in this rapid close to the wall and making pretty rough weather of it. Our camp-fires often depended on a few pieces of driftwood lodged in the rocks, as seen to the right of the picture. In the narrow sections the floods sometimes rise over 100 feet above the low-water mark.

almost clear when I went over a dip, bow first, and struck another rock I had not seen. There was a thud and cracking like the breaking of a shingle. It was all over in a minute.

THE EDITH WRECKED

The *Edith* was a wreck; my brother had disappeared. Lauzon was climbing frantically over some boulders trying to get farther down the stream to the head of the next rapid. I could not proceed with my wrecked boat, and landed on the right in an eddy in the middle of the rapid. Climbing to the top of the rock, I looked over the next rapid, but Ellsworth was nowhere to be seen, and I had no idea that he had escaped.

I was returning to my wrecked boat when Bert called, and pointed to the foot of the cliff. Going back once more, I saw my brother in a little opening at the foot of the wall where he had climbed out, 20 feet above the next rapid. Returning to the wrecked boat, I was soon beside him.

His outer garments by this time were frozen. I soon procured blankets from my bed, removed his clothes, and wrapped him up.

Lauzon, true to our expectations of what he would do when the test came, swam out and rescued the *Defiance* before she was carried over the next rapid. Seeing that he could not aid either of us, he had bailed out. Coming across with a big grin on his face, he remarked, "Young fellows, business is picking up;" then added, "and we're losing lots of good pictures."

These experiences were our Christmas presents that year, and they were not done up in small packages, either.

QUICK REPAIRS

We repaired the wrecked boat Christmas day. Three smashed ribs on the side were replaced with mesquite which we found growing on the walls. We patched the hole with the loose bottom laid inside the boats, then painted them. A piece of canvas was tacked over this, and painted also. A piece of tin finished the repair, and the *Edith* was as seaworthy as ever.

Some of our provisions were lost or spoiled in the upset. Both sacks of flour were wet, on the outside at least. At each camp the wet sacks were placed by the fire until this wet flour hardened, and we went on using from the center as if nothing had ever happened. We caught a few fish. We felt pretty good one morning when we saw fresh meat in sight in the form of a big mountain sheep. My brother reached for his camera at the same instant that I grabbed my six shooter, but the trigger was rusted and we had no mutton stew that day.

The motion-picture camera had been under the water in our difficulties in the rapids and needed a thorough cleaning, so we held up one day and repaired it.

The next day we were again running rapids under walls 4,500 feet high. A day or two later we camped at the mouth of Havasu Canyon (Cataract Creek), but on quite a different stage of water than that we had seen when here before (see picture, page 180). It was 50 or 60 feet higher on the walls when we had worked our way down on that overland trip. At the next camp below here, New Year's eve, the walls of the inner gorge rose 3,000 feet above us and were almost sheer; then another wall rose beyond this, with a narrow plateau between. The loss of the boats in that section would quite likely have been fatal, as there was no chance of climbing out over such walls as those.

WIRELESS WARNINGS

In these sections, if it was not possible to go below the rapid to inspect it, the one who arrived first would climb out and, with signals of the hands or a flag, would direct the one who remained how to proceed; or if he ran the rapid without getting out, he would point out the hidden rocks, which looked so much like innocent waves from above the rapid. We were always endeavoring to make time. If the rapids were simply big water, without danger of an upset, we would wear a light rubber coat, so that the splashing water would freeze on the coat instead of on our clothes.

If the life-preservers were not constantly worn, they were always kept in-

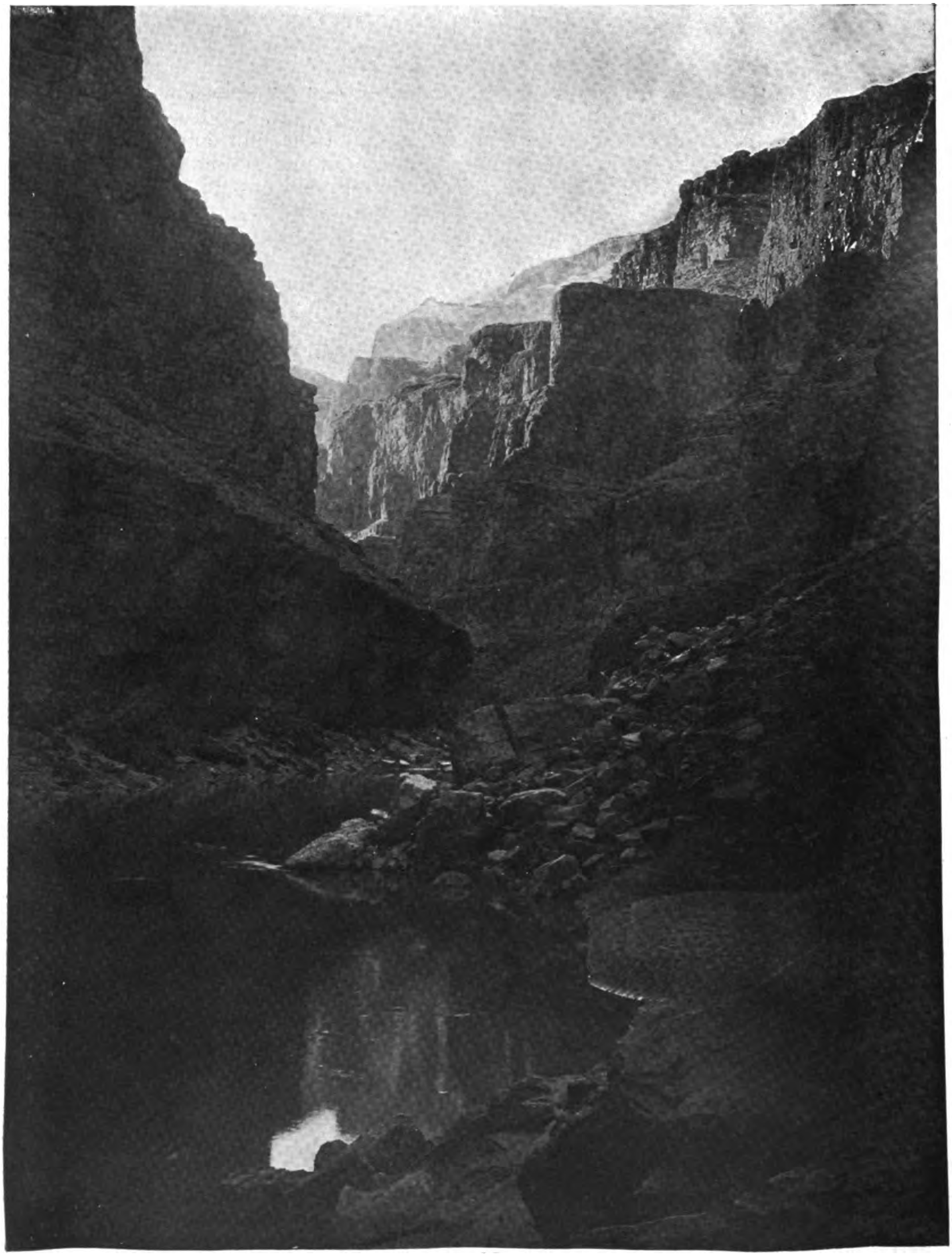


Photo by Kolb Brothers

THE HIGHEST SHEER WALLS IN THE GRAND CANYON

The inner gorge is about 3,000 feet deep. The upper walls tower about 4,500 feet above the river. In these narrow sections the floods sometimes rise 100 feet above the low-water mark. It was very cold while going through this section. Little or no sun reaches the bottom of these canyons in January, except where the course varies from its east to west direction. Cold winds would sweep down from the snow-covered cliffs above and we were constantly shifting about to keep warm.

Photo by Kolb Brothers

AT THE MOUTH OF THE COLORADO RIVER, IN MEXICO

flated and close at hand. We preferred this type of preserver to the cork on account of its light weight. For the same reason we had inflated mattresses with our sleeping bags. They saved carrying a lot of extra bed clothing, and could be thrown on the wet sand or rocky, uneven ground, and we could enjoy a comfortable night's rest. Even in their protecting sacks of rubber and canvas they looked very small when compared with the beds usually carried by the cattlemen and other men of the open.

We always kept a change of dry clothing and sometimes the films from the motion-picture camera in the bed, and as soon as the camp-fire was started a quick change was made, and the wet clothing was scattered on rocks or hung on lines close to the fire. They seldom dried entirely, and it was anything but pleasant to crawl into them the next morning.

When choosing a camp, the first thing to be considered was driftwood, as nothing but a little mesquite grew in these lower canyons. A flood which had come down when we were in Lodore had carried most of the wood out with it, and it sometimes was very difficult to find all we needed. For this reason, if we found a good camp after 4 p. m., we usually took it. The second consideration was a quiet place to tie our boats. Both boats had been rubbed against rocks in one or two places until they were nearly worn through. The last thing we thought of was a place to throw our beds. A ledge in the rocks, an overhanging wall, an occasional cave, but usually a bed in the sand, shoveled out to fit our beds, were

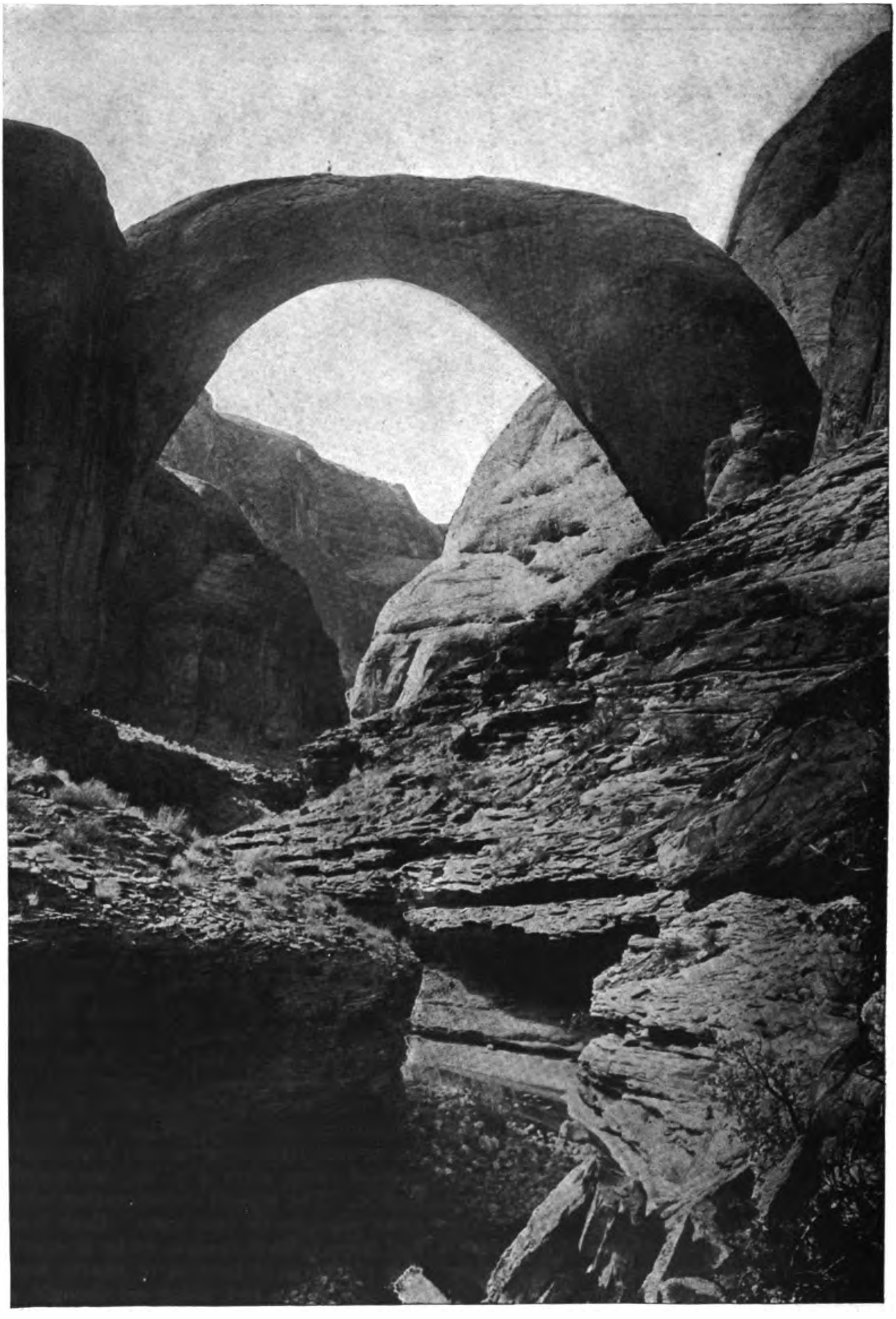


Photo by Kolb Brothers

LOOKING NORTH TOWARD THE RIVER AT THE RAINBOW NATURAL BRIDGE

Note figure on top for comparative idea of size. The dimensions are: Height, 309 feet above the little stream; 270 feet inside of span; 30 feet wide at top of narrowest point. The rock is softening and eroding rapidly, and the bridge will not last unless something is done to preserve it.

our choice of bed-rooms. They were always well ventilated.

With all our efforts to make headway, our usual day's run was about 10 miles, if we were in bad water. The Grand Canyon would come under this list, with its 1,700-foot fall in 200 miles. It was seldom that we had any sun in these deeper canyons (see page 180), as we traveled toward the west. In December and January it snowed several times, but the snow never descended quite to us, but turned to a chilling rain. This would freeze on the rocks, making it very poor footing; so we made no portages that were not absolutely necessary.

BELOW THE TOROWEEP

About 60 or 70 miles of this great sheer-wall canyon, the walls began to break down, becoming lower and less precipitous. How long it lasted it would be hard to say, but the stream resumed its relentless sawing and cut down to its old level just as it had before, and mammoth blocks of the volcanic rock are scattered for miles along its course.

At one point in this section we imagined we saw smoke and hastened down, wondering if our new-found friend would be a prospector or a cattle-rustler, Instead of a camp-fire we found some warm springs falling 20 feet into the river. Beside the springs was a lava-filled rapid, so full of jagged sections of the volcanic rock from the cliffs that a portage was advisable. It was colder than usual this morning, and we were in the icy water a great deal as we lined and lifted the boat over the rocks at the edge of the rapid. We would stand this until numbed with the cold, then would go down and thaw out in the warmer water at the springs.

A WAYSIDE MEETING

A day's travel below this we did see some smoke, and on climbing the bank found a little, old prospector sitting in a dugout which he had shoveled out of the sand. The roar of the rapid prevented him from hearing us until we were directly in front of him.

He looked at our clothes, the rubber coats and life-preservers, then said in a matter-of-fact tone: "Well, you boys must have come by the river." After talking with him awhile we learned that he had once been wrecked in Lodore Canyon, and that Mr. Chew, who had taken Jimmie out, had supplied him with a horse and aided him on his way to civilization. His name, he told us, was Snyder, and he had just been across the river on a raft to do some assessment-work on a copper claim which he was sure would develop into a valuable mine.

He was cooking his noon meal when we arrived—two pieces of bacon and two biscuits—in a frying-pan, and with nothing else in sight; yet with true Western hospitality he invited us to stay for dinner. We thanked him, but declined, as he told us that we were but six miles above Diamond Creek, where by walking 22 miles, with a climb of 4,000 feet, we could reach the railway.

Below Diamond Creek we were surprised to find the granite walls even higher than they were above, and the rapids continued to get worse. We had imagined that the walls receded down, but the opposite was the case. It was in this last section that the three men left the Powell party, when within a little more than a day's journey from the end of the canyon. They were killed by the Indians the day after they climbed out on top.

THE LAST GREAT RAPID

Any one expecting to make this joy ride at any time will know by three pointed peaks, on the south side, that they are nearing the end of the canyon; also by a long quiescent stretch of water that they are nearing one of the worst rapids in the series. Major Powell graphically describes this rapid, located, as he said, "below a bold, lava-capped escarpment." Mr. Stone also warned us against it, stating "it was the last bad rapid in the canyon. Below that everything could be run."

On account of low water we were enabled to land at the lower end of the escarpment before beginning this portage. The river had an approximate fall of 40 feet and was filled with exposed and slightly submerged boulders from one end to the other. The roar of the rapid was deafening.

We took our boats over one bad group of rocks, lined them down, then lifted them over a second lot. The rocks were icy; there was only room for two to work, and we were weak and bruised with two other portages in much similar places. It was with a great sigh of relief that we slid our boats over this last rock, completed our fourteenth and last portage, and prepared to shoot down on the swift water that ended the rapid.

Other rapids remained, but we ran them all, with only a glance at them from the boats. We were pulling for the end. There were two more camps before we emerged into the flat country.

Many people, learning of our trip, think we are entitled to a certain degree of honor for having done something unusual. The trip is unusual and will hardly become a popular tour; but as for honor, all honor is justly due to the one who made the original exploration—Major J. W. Powell. He did not know what minute he would be confronted by a waterfall. We knew there were none. All we can say for our trip is that two or three men seldom attempted anything harder and got away with it. Our motion-picture films and plates were carried through 365 big rapids, a descent of nearly 6,000 feet, after having been on the river 101 days. We landed in Needles on January 18, one month from the time of our start from Bright Angel trail.

HOW SMITH GOT THROUGH

Among some letters awaiting us was the following, bearing the postmark of Hite, Utah:

KOLB BROTHERS.

DEAR FRIENDS: Well, I got here at last, after seventeen days in Cataract Canyon. The old boat will still stand a little quiet water, but will never stand another rapid. I certainly played rings around some of those rocks in Cataract; I tried every scheme I had ever heard of and some that were never thought of before, but got here at last. I hope the movies are good.

Your friend,

CHAS. SMITH.

Another from Hite stated that Smith told him when he came to that last rapid he had carried all his equipment over the narrow ledge and was engaged in dropping his boat down with the chain, standing on the rock above, when he was suddenly jerked off into the river. He still retained his hold on the chain, pulled himself into the boat, and went through the entire rapid without oars and without upsetting, landing a mile and quarter below his supplies.

My brother afterward completed the trip into Mexico, to the Gulf of California, thus making for the second time a complete journey from Green River, Wyoming, to the tide-water.

We have just returned from a 600-mile overland trip to the reservations of the Hopi and Navajo Indians, taking in the cliff ruins of Marsh Pass and our often-thought-of Rainbow Natural Bridge.

Rising from our bed under that wonderful arch while the stars were yet in the sky, we made our way to the river, and saw a familiar turn in the wall past which we had rowed with scarcely a glance that morning two years before. Returning in time for a late breakfast, we spent a few hours in making some views; then, while the guides took the horses around the base of Navajo Mountain, we climbed the peak, sleeping under the shelving rock. Guided by signal fires, we rejoined our party the next day on the other side of the mountain and began our homeward journey over the sands of the Painted Desert.

THE CAPE COD CANAL

By Commodore J. W. Miller

ANY ONE who looks at the map of New England must notice the semi-detached air of Cape Cod. Students of geology know that it was formed during the Glacial period, when boulders and clay from the shores of Labrador and Maine created it, as a breakwater over which the sand of the sea was later deposited. Another ice-drift coming down the valleys of Connecticut scoured out the pools since known as Long Island Sound and Buzzards Bay. Between the latter and Barnstable Bay lies an isthmus of moraine deposit only 8 miles in width, with a surface elevation 29 feet above tide-water. Through this narrow strip a ship canal has just been dug.

Thoreau calls Cape Cod the "bare bended arm of Massachusetts." As such it safely guards the large sheet of water lying within its protection, but is a menace to vessels navigating its eastern lee shore or sailing through the fog-bound region of Vineyard Sound. There lie dangerous shoals and banks swept by storms and uncertain currents, pitfalls where many a ship has gone down.

For these reasons and from the earliest times the idea of cutting a channel through the low Bourndale Valley, at the shoulder of the cape, has recommended itself as an obvious shortening and deepening of the way, through safe and smooth water, between Boston and Southern points.

The Pilgrim fathers had noted the benefit of canals during their sojourn in the low countries; had seen their sons lost while fishing off the cape, and, with their love of hard work and natural inclination toward the water, attempted to make an interior passage.

As early as 1623 Miles Standish was skirting the shores, and on September 2, 1627, his boats sailed up the Scusset River and met the sloops of the merchant De Ressiers which, at the starvation call of the colony, New Amsterdam had sent through Buzzards Bay to the rescue of the Englishmen. There, on the Manomet River, began the first water trade that, increasing for three centuries, will be greatly enlarged now that the canal is finished.

The effort to connect at this point what the earliest settlers called "the North and South seas" has never been abandoned. Old charts of the 17th and 18th centuries show possible routes. The High Court of the Colony ordered examinations and surveys. George Washington, when in Boston in 1776, hoped to be able to send his troops to New York through the route; finding it impossible, he said "the interior barrier should be cut in order to give greater security to navigation and against the enemy."

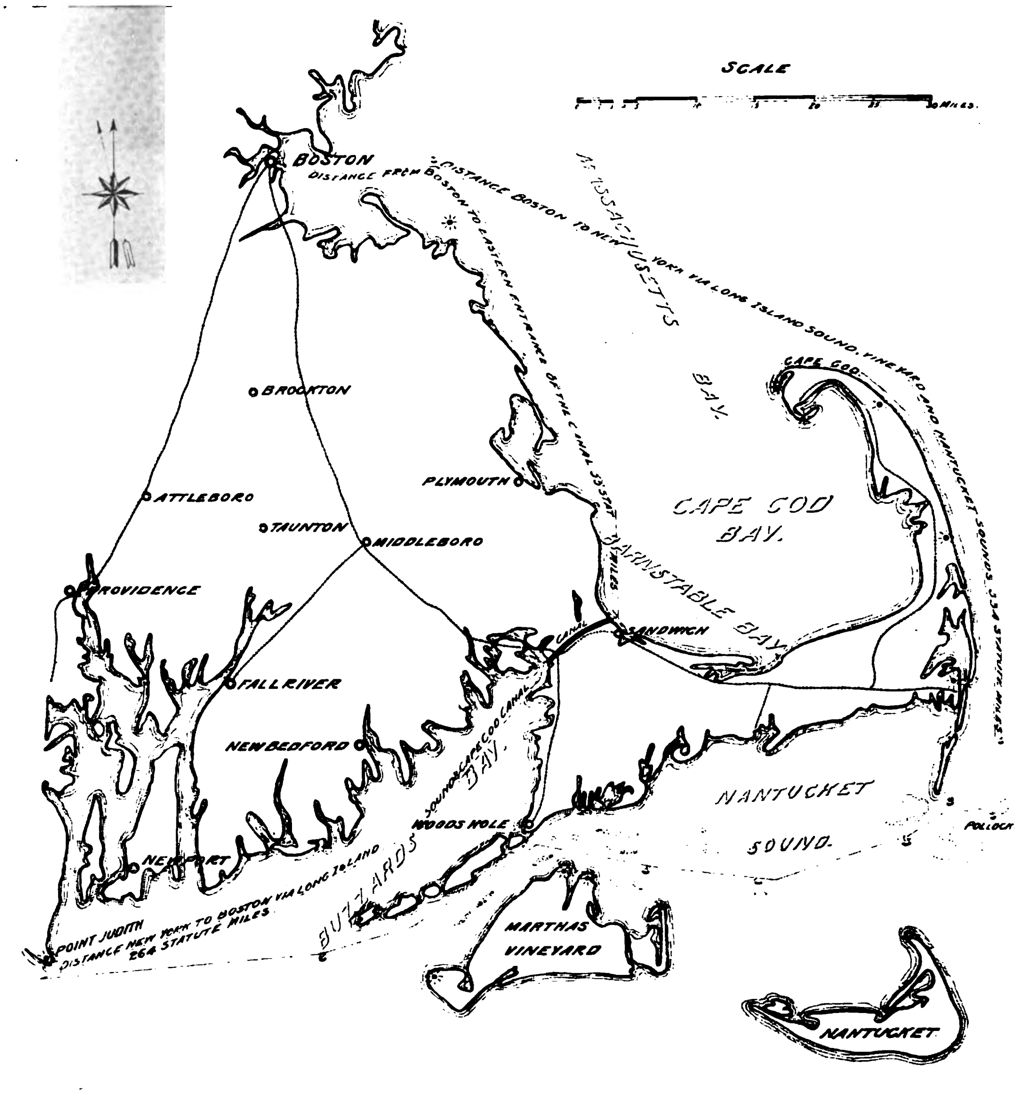
From the close of the Revolution until 1820 high officials of the United States and of Massachusetts advocated the canal as useful in time of war as well as in peace, General Knox, Secretary Gallatin, Winthrop, and Thorndike being prominent in the movement.

The era of canal building in this country and further local agitation followed. If Massachusetts had then had the foresight of Virginia and New York, she might have wrested the marine supremacy from the Hudson at a cost trivial compared to the money spent upon the Erie and Chesapeake canals.

All through the last century company after company was formed and governmental acts passed looking toward the removal of the narrow strip of land blocking smooth-water transit between Long Island Sound and the waters of eastern Massachusetts.

The reasons for failure are not hard to discover. Railroad building was at its height and investment found quick returns in the West. The pace of the slow sailing vessel met the time requirements as a carrier of crude material from Southern mines and forests Engineering hydraulic methods were crude and expensive compared to their perfection during the past few years. These reasons no longer exist.

The Spanish-American War opened


SCALE
MILES.
BOSTON
DISTANCE FROM BOSTON TO EASTERN ENTRANCE OF THE CANAL 55 STAT. MILES
DISTANCE BOSTON TO NEW YORK VIA LONG ISLAND SOUND, VINEYARD AND NANTUCKET SOUNDS 334 STATUTE MILES.
MASSACHUSETTS BAY.
CAPE COD
CAPE COD BAY.
BARNSTABLE BAY
BROCKTON
PLYMOUTH
ATTLEBORO
TAUNTON
MIDDLEBORO
PROVIDENCE
SANDWICH
CANAL
FALL RIVER
NEW BEDFORD
SOUND TO CAPE COD CANAL
BUZZARDS BAY.
WOODS HOLE
NANTUCKET SOUND
POLLOCK RIP
NEWPORT
POINT JUDITH
DISTANCE NEW YORK TO BOSTON VIA LONG ISLAND 264 STATUTE MILES
MARTHAS VINEYARD
NANTUCKET

MAP OF THE CAPE COD CANAL

Showing how it eliminates the dangerous passage around the Cape and shortens the route from Boston to New York and southern ports by 70 miles. During one storm, in October, 1913, three vessels and two lives were lost on Cape Cod. It is estimated that at least 2,000 vessels were wrecked in the Nantucket Shoals region between 1843 and 1913, 908 of which were a total loss, and that about 700 fishermen lost their lives owing to the fact that the long arm of Cape Cod prevented them from reaching a haven in a sudden storm.

the eyes of a populated country to the value of over-sea markets, and has led to appreciation of the value of waterways. The congested land lines of the East need the relief which only rivers and coast channels can supply. Sailing vessels are rapidly giving place to steamers, which must make quick time on regular schedules.

With these conditions before him, Mr. August Belmont sought the advice of Mr. William Barclay Parsons, who had been a member of the Panama Canal Commission. He checked the data collected by previous experts; found that the engineering problem at Cape Cod was simple; that neither current nor ice would interfere with steam traffic through a sea-level channel; that no littoral sand-drift would clog the entrance, or that the anticipated quicksands existed, and that a modern up-to-date channel, comparable in dimensions to the ones at Kiel and Manchester, was practicable, while the tolls from the thousands of vessels now rounding Cape Cod would provide a return upon the money expended.

The result is that a private corporation is about to finish this much-needed waterway. Its financial success being assured, money for other essential ones along the Atlantic coast probably can be obtained, and thus the Treasury of the United States will be relieved from the many demands made upon it in "river and harbor bills," while the merchant marine can afford to pay for the increased safety. Governmental taxes will not be increased and the consumer will receive his raw product at less cost.

The point must be kept in mind that the Cape Cod Canal is a commercial proposition. In a recent address Mr. Belmont made the following statement: "The present canal as planned is ample for all commercial purposes. We are satisfied with it; need no help to construct it and want none." And yet a study of the chronology and history of the Cape Cod problem shows that since the days of the Revolution continued stress has been laid upon its military aspect. Its importance as an interior line of defense is greater today than ever before.

The preceding pages have been necessarily limited to a mere outline of the efforts of far-seeing men to accomplish a boon to navigation and to humanity. Let us now take an imaginary trip through the canal.

Approaching the western end of the canal either by train or motor, we find ourselves at the railroad station of the village of Buzzards Bay. A walk of a few hundred yards brings us to the new 2,200-ton railroad bridge, with its single-lift span of 160 feet in width. This can be raised for the passage of ships in less than one minute. Over the structure runs the railroad both to Provincetown and Woods Hole. As the line down the cape crossed the canal valley in three places, this bridge was essential to bring the New Haven road entirely on the south bank of the new channel. From it and as far as Sagamore side tracks will be possible for new industries, requiring both marine and land facilities.

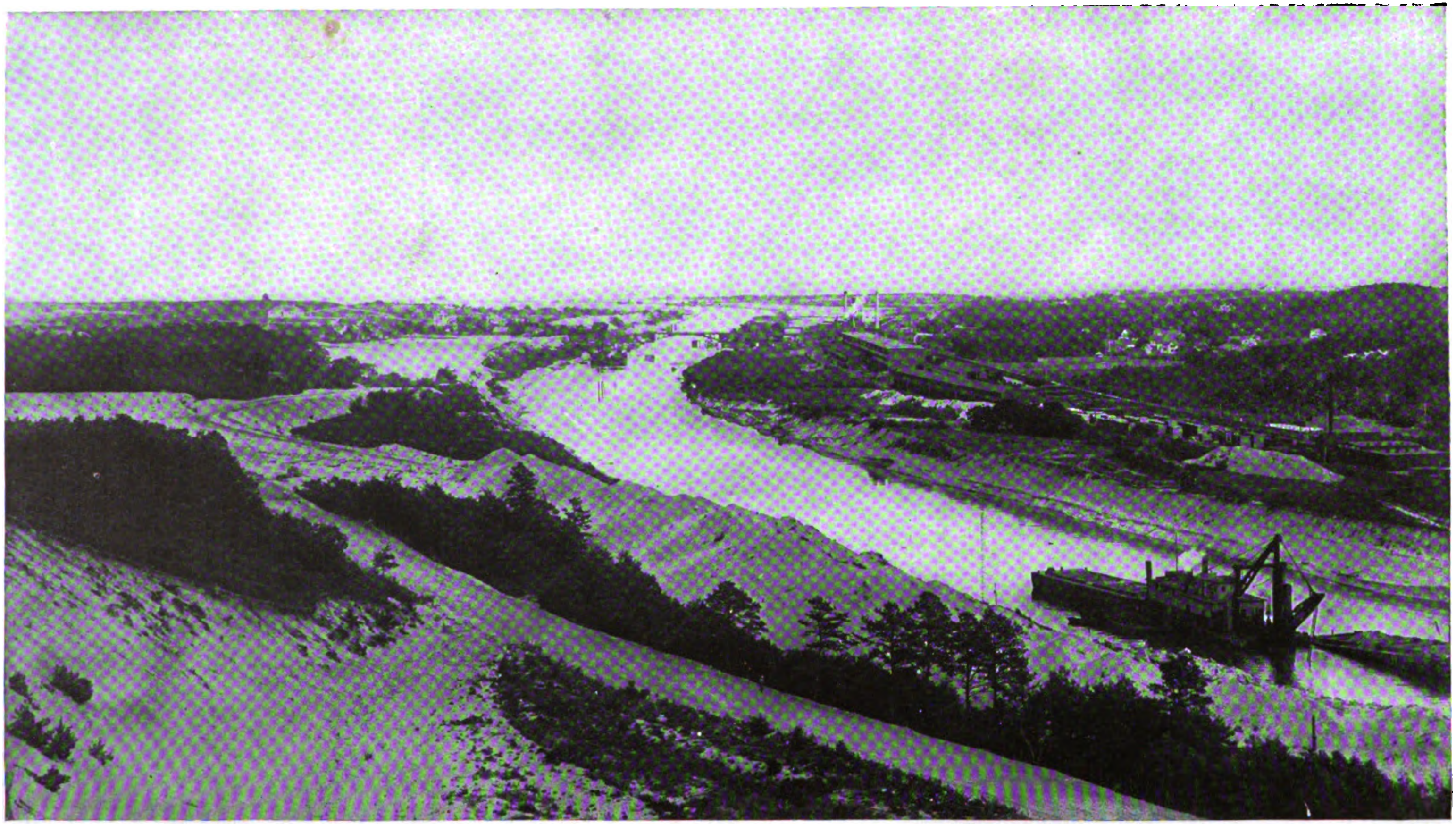
Standing upon the bridge, the reclamation of the lowlands is noticeable, the excavation from the prism having been used to create level and solid ground. The outlook from this point down the bay is interesting, including as it does a view of Grey Gables, the former home of Grover Cleveland, and a stretch of the 5-mile approach deepened by the Canal Company in order to reach the 30-foot contour off Wings Neck. All the expense for the improvement of these waters of the United States, as well as that incident to building the bridges and four miles of railroad, have been borne by the Canal Company.

Retracing our steps to the station, we take our motor and, proceeding along the main road, come to the new highway bridge crossing the canal at Bourne. It is elevated 35 feet above water to allow minor craft to pass without opening the draw. The foundations of this as well as of all other bridges are sunk for a prospective depth of 35 feet. Here we obtain our first view of the lovely Bournedale Valley, the bordering wooded hills seemingly a barrier through which it would be difficult to cut.

This was the spot where Miles Standish met the Dutch sloops. It has taken 291 years to cut through the short intervening barrier of less than four miles between the shallow waters of the bays.

Turning on our tracks, we follow the road along the north bank, and from its summit look down upon a ribbon of sparkling water, wider and deeper than de Lesseps' original canal at Suez. Here three months ago shovels were snorting and locomotives puffing as they tugged at boulders set like teeth in the stone wall of glacial deposit.

At our feet traces of the old river bed are still visible, and perhaps a portion of the dam protecting the contractor's plant as it worked, with immense centrifugal pumps, to keep the cut dry and create a channel 12 feet below sea-level. The dams were cut in April, and two great "dipper" dredges, removing over 20,000



THE CAPE COD CANAL LOOKING EAST FROM BOURNEDALE: SAGAMORE HIGHWAY BRIDGE OVER CANAL MAY BE SEEN IN THE DISTANCE

FISHING VESSELS AT ANCHOR IN THE EASTERN END OF CAPE COD CANAL

THE HIGHWAY BRIDGE AT SAGAMORE OPEN, ON THE CAPE COD CANAL tons of earth a day, made short work of completing the deepened canal.

Proceeding still along the north road, we reach Bournedale, with its sweeping canal curve, and are soon abreast of the highest point of the cut, 30 feet above sea-level. Ahead of us is Sagamore, an interesting example of New England enterprise, with its thriving manufacturing plant at a heretofore remote spot and without the benefit of water transportation. Approaching the handsome highway bridge, we stop at its center and look down at the new channel, its banks paved with stone as a protection from the swash of passing vessels. To the eastward is the canal, widened for the passing ships from east and west.

We now turn and proceed toward Sandwich, taking the first left-hand road, which leads us back to the canal location, and soon come in sight of the extreme eastern end of the channel, with its broadened prism of 300-foot bottom width. This widening is essential to provide for the safe entrance and exit to and from the bay. Inclining to the right and continuing on the road, we cross the railroad tracks to the left, and from the top of "Town Hill" look down upon the 400 acres of former swamp land, upon which has been placed two million cubic yards of sand.

To the northward, 16 miles away, are the cliffs of Plymouth. If the weather be clear, the shaft dedicated to the Pilgrims at Provincetown can be dimly seen 20 miles to the northward and eastward, while in the near foreground lies the massive granite breakwater, 3,000 feet long, containing 350,000 tons of granite as an ample protection against the northeasters which occasionally blow. The protecting arm of the western shore of the cape is seen as it rounds from the southward toward its northern extremity.

Such a trip over the 8-mile isthmus is an object lesson, giving an enlarged impression of modern engineering and future possibilities. If time serve, the traveler should linger in the neighborhood, for there he will hear from men bearing historic names how the Perrys of Sandwich fought the battles of 1812 or opened up Japan in 1854; how James Otis of Barnstable pleaded the cause of the colony prior to the outbreak of the Revolution. Others will tell of past canal failures, and old skippers will spin yarns of the seafaring days, and relate how Collins thought out his plans for the first American line of steamers, while many a story will be related of Webster, Cleveland, and Joe Jefferson, who lived near by and fished in the neighboring streams.

As your motor carries you to the southward toward Falmouth from Sandwich, you will pass the farms of thrifty Portuguese, who settled here when the days of whaling ended, and you will compare these natives of the Azores with the latest immigrants, the Italians, whom you saw along the canal line, where they were as alert with pick and shovel upon this American canal as were their forebears in the days when they toiled in the Venetian swamps.

Further to the eastward you may pass through the Mashpee reservation, where descendants of the original Indian tribes still live, and then, in quick and notable contrast, run by the fine estates of the western sons of Massachusetts, who have been lured back by the call of the cape; thence through pine forests, bordered by numerous fresh-water lakes on the one side and the sea beach upon the other, you will reach Chatham and gaze out over Monomoy Point, where the Frenchman De Monts nearly came to grief in 1605 upon the cape which he rightfully named "The Graveyard of Ships."

If the fog begins to roll in, with the prevailing wind, you will realize in part the necessity of ships avoiding the treacherous sunken reefs and shoals, although no one can fully appreciate the full danger of the Vineyard Sound route unless he has faced the "dirty southwesters" or listened to the graphic description of wreck from the lips of the fishermen. The local and true stories told by those who have escaped the toll of the sea are even more graphic than those in the numerous works of fiction concerning this interesting locality.

Humanity demanded a canal at Cape Cod; commerce needed it; perseverance, pluck, and financial ability have finished it—ready for a tributary and existing tonnage greater than that of Suez and over twice that estimated for Panama.

MAP OF EUROPE INCLUDING THE NEW BALKAN STATES

THE eyes of the civilized world are now focused upon Europe and the stupendous war there beginning. Therefore the map accompanying this issue of the NATIONAL GEOGRAPHIC MAGAZINE is particularly timely. It contains the most complete and up-to-date data about central Europe, including the boundaries of southern Europe as reformed by the Balkan wars and as determined by the London Conference.

This map will prove of much value to the members of the Society who wish to follow the series of military campaigns that it is feared will be without parallel in history.

The issuance of this map is in keeping with the policy of the National Geographic Society of bringing to its members, through their Magazine, the most authentic information to be had, in the form of maps, text, and photographs, concerning any part of the world where events arrest and for the time tend to monopolize the attention of civilization.

Extra copies of the map will be furnished for fifty cents. Copies printed on linen, one dollar.

The following tables present the salient facts about the countries of Europe and their situation at the outbreak of the war:

POPULATION AND AREA

COUNTRY	TOTAL POPULATION	POPULATION PER SQUARE MILE	AREA, SQUARE MILES
England:			
Home	46,000,000	376	121,316
Colonial	390,000,000	....	13,123,712
Germany:			
Home	66,000,000	316	208,794
Colonial	15,000,000	....	1,026,000
France:			
Home	39,600,000	191	207,129
Colonial	54,000,000	....	4,165,000
Belgium:			
Home	7,579,000	666	11,373
Colonial	20,000,000	....	913,127
Netherlands:			
Home	6,144,000	466	13,171
Colonial	38,107,000	....	828,000
Austria-Hungary	51,605,000	197	261,000
Bulgaria	4,401,000	118	37,199
Denmark	2,775,000	178	15,586
Italy:			
Home	34,687,000	313	110,688
Colonial	1,279,000	....	458,000
Norway	2,392,000	19.19	124,675
Rumania	7,248,000	143	50,715
Russia	170,000,000	20	8,500,000
Servia	2,957,000	158.55	18,650
Sweden	5,609,000	32.44	172,920
Switzerland	3,781,000	236.97	15,955
Turkey-in-Europe	2,000,000	18	11,100

THE ARMIES OF EUROPE

COUNTRY	PEACE STRENGTH	RESERVES	TOTAL WAR STRENGTH	UNORGANIZED, BUT AVAILABLE FOR DUTY
Great Britain*	254,500	476,000	730,000	2,000,000
Germany	870,000	4,430,000	5,200,000	1,000,000
France*	720,000	3,280,000	4,000,000	1,000,000
Austria-Hungary	390,000	1,610,000	2,000,000	3,000,000
Russia	1,290,000	3,300,000	5,500,000	5,200,000
Italy	250,000	950,000	1,200,000	1,200,000
Belgium	42,000	180,000	222,000	400,000
Netherlands*	35,000	145,000	180,000	150,000
Denmark	14,000	56,000	70,000	125,000
Sweden	50,000	400,000	450,000	200,000
Norway	35,000	80,000	115,000	100,000
Bulgaria	60,500	320,000	380,000	100,000
Servia	32,000	208,000	240,000	60,000
Rumania	95,000	100,000	500,000	175,000
Switzerland	22,300	252,000	275,000	50,000
Turkey	400,000	300,000	700,000	2,000,000

* In the case of Great Britain, "Peace strength" excludes the native Indian army of 175,000.

In the case of France, "Peace strength" includes colonial troops.

In the case of Netherlands, "Peace strength" is exclusive of the colonial army of 36,000.

THE NAVIES OF EUROPE

COUNTRY	MODERN BATTLESHIPS	CRUISER BATTLESHIPS	OLDER BATTLESHIPS	FIRST-CLASS CRUISERS	OTHER CRUISERS	DESTROYERS	TORPEDO BOATS	SUBMARINES	OFFICERS AND MEN
Great Britain	29	10	38	42	70	227	58	85	137,500
Germany	19	7	20	9	45	141	47	30	66,783
France	17	0	15	18	13	87	173	90	60,621
Russia	9	4	8	6	9	105	23	48	52,463
Italy	8	0	8	7	13	35	73	20	33,095
Austria-Hungary	4	0	9	3	9	18	53	15	17,581
Sweden	0	0	0	1	0	8	51	7	5,715
Netherlands	0	0	6	0	11	8	33	8	11,164
Norway	0	0	0	1	4	3	26	5	1,003
Denmark	0	0	1	0	1	0	15	3	4,000

NOTE

Extra copies of the August issue containing European map will be furnished for fifty cents. Copies of the map mounted on linen, unfolded, one dollar.

The Geographic's Advertising Value

SUM UP in your mind just how you yourself regard the Geographic, the position it holds in your household, and with what interest each member of your family welcomes its arrival. Multiply your total three hundred thousand times, since the Geographic goes into that number of well-to-do, intelligent homes by direct subscription, and some idea of the value of its limited number of advertising pages is before you.

Most business men know that the successful marketing of a high-grade product depends largely upon a proper degree of intelligent advertising, and intelligent advertising at once suggests the Geographic, for it combines quality with quantity of circulation (greater than that of any non-fiction magazine in the world), intimate introduction by direct subscription into homes of people who want the best and have the wherewithal to pay for it, and a sustained interest that has never before been equaled. Only the highest type of advertising is accepted; therefore, you are sure of the company you are in. Every dollar received from advertising is expended in the Magazine itself.

If you will direct your Advertising Department to investigate these facts, the value of the investment is easily proved. Rates and detailed circulation upon application. Address:

Advertising Dept., National Geographic Magazine,
WASHINGTON, D. C.

PRESS OF JUDD & DETWEILER, INC.

Williams'

Holder Top Shaving Stick

Convenient when *you* first use the stick . . .

More convenient when the stick is nearly used up.

The more you try other kinds, the better you will understand why Williams' Shaving Soaps are so popular.

Send 4 Cents in Stamps
for a miniature trial package of either Williams' Shaving Stick, Powder or Cream, or **10 cents** for Assortment No. 1, containing all three articles.

THE J. B. WILLIAMS COMPANY, Dept. A, Glastonbury, Conn.

Stick

The same dependable soap in a box with the convenient hinged cover which can never be mislaid—it's fastened on.

Williams' Shaving Stick
Williams' Shaving Stick
Hinged Cover Nickeled Box

Powder

For the double quick shave with the same comfortable and refreshed after effect. Leaves all your time for the razor.

Williams' Quick & Easy Shaving Powder
Williams' Shaving Powder
Hinged Cover Nickeled Box

Cream

Here is sheer luxury in shaving. Squeeze it into a hollow in your wet brush. Particularly recommended for easily irritated skins.

Williams' Luxury Shaving Cream
Williams' Shaving Cream

VOLUME XXVI NUMBER THREE

CAMBRIDGE, MASS. 1914

THE NATIONAL GEOGRAPHIC MAGAZINE

SEPTEMBER, 1914

◆

CONTENTS

The France of Today
WITH 26 ILLUSTRATIONS A. W. GREELY

Belgium: The Innocent Bystander
WITH 36 ILLUSTRATIONS WILLIAM JOSEPH SHOWALTER

The Foreign Born in the United States
WITH 14 ILLUSTRATIONS

The German Nation
WITH 30 ILLUSTRATIONS

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D.C.

2.50 A YEAR 25 CTS A COPY

NATIONAL GEOGRAPHIC SOCIETY

HUBBARD MEMORIAL HALL
AVENUE OF THE PRESIDENTS AT M STREET, WASHINGTON, D. C.

HENRY GANNETT . . . . PRESIDENT
O. P. AUSTIN . . . . . . SECRETARY
GILBERT H. GROSVENOR, DIRECTOR AND EDITOR
JOHN OLIVER LA GORCE ASSOCIATE EDITOR
O. H. TITTMANN . . . VICE-PRESIDENT
JOHN JOY EDSON . . . . TREASURER
F. B. EICHELBERGER . ASSISTANT TREASURER
GEORGE W. HUTCHISON, ASSISTANT SECRETARY

BOARD OF MANAGERS

1912-1914

John Joy Edson
President Washington Loan & Trust Company

Charles J. Bell
President American Security and Trust Company

David Fairchild
In Charge of Agricultural Explorations, Dept. of Agric.

C. Hart Merriam
Member National Academy of Sciences

O. P. Austin
Statistician

George R. Putnam
Commissioner U. S. Bureau of Lighthouses

George Shiras, 3d
Formerly Member U. S. Congress, Faunal Naturalist, and Wild-Game Photographer

Grant Squires
New York

1913-1915

Franklin K. Lane
Secretary of the Interior

Henry F. Blount
Vice-President American Security and Trust Company

C. M. Chester
Rear Admiral U. S. Navy, Formerly Supt. U. S. Naval Observatory

Frederick V. Coville
President of the Washington Academy of Sciences

John E. Pillsbury
Rear Admiral U. S. Navy, Formerly Chief Bureau of Navigation

Rudolph Kauffmann
Managing Editor The Evening Star

T. L. Macdonald, M. D.

S. N. D. North
Formerly Director U. S. Bureau of Census

1914-1916

Alexander Graham Bell
Inventor of the telephone

Henry Gannett
Chairman of U. S. Geographic Board

J. Howard Gore
Prof. Emeritus Mathematics, The Geo. Washington Univ.

A. W. Greely
Arctic Explorer, Major Gen'l U. S. Army

Gilbert H. Grosvenor
Editor of National Geographic Magazine

George Otis Smith
Director of U. S. Geological Survey

O. H. Tittmann
Superintendent of U. S. Coast and Geodetic Survey

John M. Wilson
Brigadier General U. S. Army, Formerly Chief of Engineers

To carry out the purpose for which it was founded twenty-three years ago, namely, "the increase and diffusion of geographic knowledge," the National Geographic Society publishes this Magazine. All receipts from the publication are invested in the Magazine itself or expended directly to promote geographic knowledge and the study of geography. Articles or photographs from members of the Society, or other friends, are desired. Contributions should be accompanied by an addressed return envelope and postage, and be addressed:

GILBERT H. GROSVENOR, EDITOR

CONTRIBUTING EDITORS

A. W. Greely
C. Hart Merriam
O. H. Tittmann
Robert Hollister Chapman
Walter T. Swingle
Alexander Graham Bell
David Fairchild
Hugh M. Smith
N. H. Darton
Frank M. Chapman

Entered at the Post-Office at Washington, D. C., as Second-Class Mail Matter
Copyright, 1914, by National Geographic Society, Washington, D. C. All rights reserved

HARVARD COLLEGE LIBRARY
OCT 9 1914
CAMBRIDGE

VOL. XXVI, NO. 3 WASHINGTON SEPTEMBER, 1914

THE NATIONAL GEOGRAPHIC MAGAZINE

THE FRANCE OF TODAY

BY MAJOR GENERAL A. W. GREELY, U. S. ARMY

MY YOUTHFUL impressions as to France and to Frenchmen were scarcely favorable. They began 48 years ago, when a soldier's orders carried me to the valley of the Rio Grande, where 40,000 of the veterans of the Grand Army of the Republic with impatience waited watchfully, while looking loweringly across the turbid river at the imperial French contingent, which under Maximilian then harassed Mexico.

These impressions were not bettered in later years by that woeful story of rack and ruin, of despair and heroism, of incapacity and intrigue, which attended the decadence and downfall of the French Empire. And then the almost incredible tales of disloyalty to country by extreme factions—of the imperialistic surrender at Metz and of the communistic outrages at Paris. Was France a nation or merely an aggregation of fanatics? But these were visions from afar, seen as through a glass darkly, which assumed fairer aspects and nobler forms when France became for months my habitat.

Although then in the age when one's mind is "wax to receive and marble to retain," yet these changed views were disassociated from pleasant personal experiences, which were indeed events not to be forgotten, among them chatting in the Latin quarter with the grandiloquent Gambetta, "the madcap fool of Tours"; saluting the soldierly MacMahon in the Bois de Boulogne; being the guest of Renan in the College de France; listening spellbound to magnetic Thiers in the streets of Marseilles; joining in the not-too-frantic applause of the budding genius of the divine Sarah in the first freshness of her eternal youth; furtively watching the self-satisfied pluming in public of the great Victor Hugo; looking on at Brown-Séquard's experiments on reflex action, and, above all else, gaining the friendship and sharing the hospitality of the great physicist, Mascart.

THE WAYS OF THE PEOPLE

As one cannot indict a nation for the crimes of the few, so one cannot exalt its virtues or assert its preëminence on the qualities of its nobler souls or of its gifted intellects. A nation is learned in one way only, through contact with its people—at their work and play, in office and in street, in business and at charity, by their rantings and through their prayers.

Yes, the heart of a nation is in its people, in France as in America. One must listen, if one would know, to its ceaseless, ever-changing voices—proclaiming beliefs, demanding justice, bemoaning disasters, advocating reforms, scarifying abuses, asking sympathy, and even beseeching protection against itself. The chosen representatives vote its laws, found its institutions, formulate its reforms, and dictate the policies which spell progress or mean an earlier coming of that decadence which in the ages past has been the ultimate fate of every historic nation.

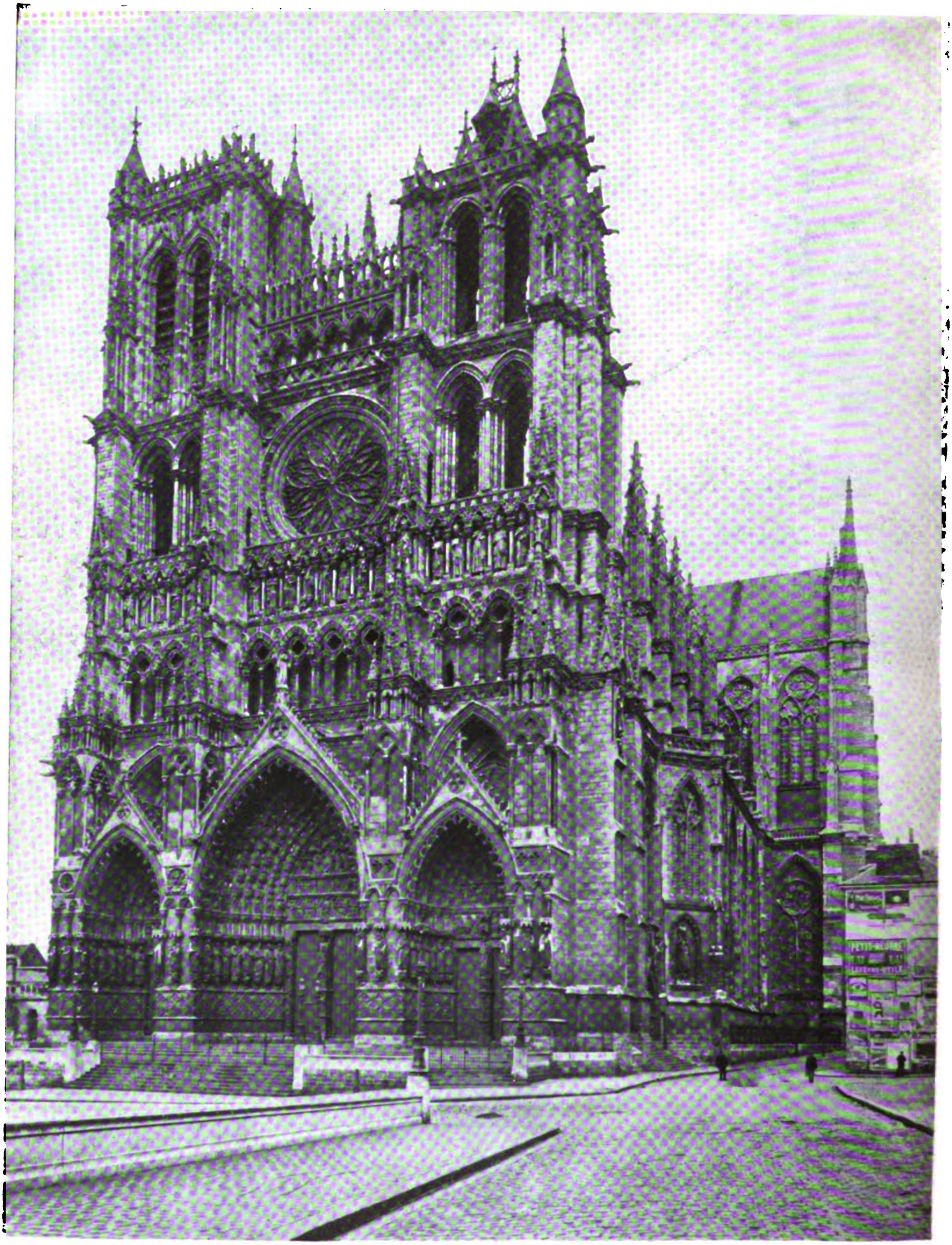
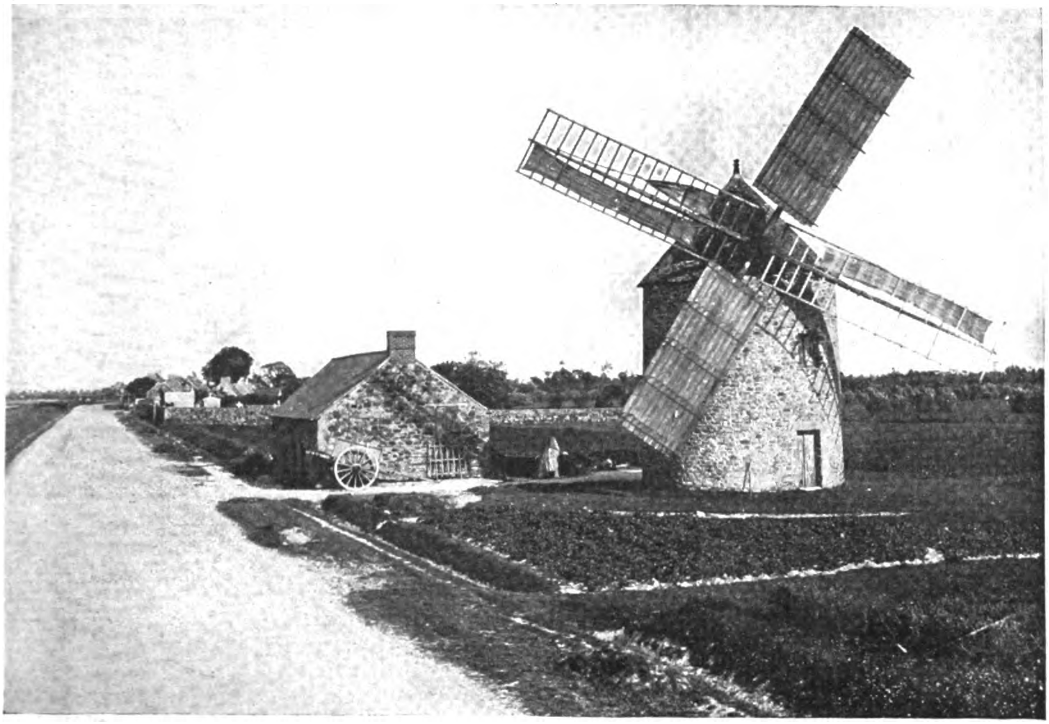


Photo by E. M. Newman

THE AMIENS CATHEDRAL: FRANCE

Regarded as probably the finest church of Gothic architecture in France, this edifice is the most important structure in the city. It was erected chiefly between 1220 and 1288, under plans of Robert de Luzarches. It consists of a nave nearly 140 feet high, with aisles and lateral chapels, a transept with aisles, and a choir ending in an apse surrounded by chapels. The total length of the cathedral is 469 feet and its breadth 216 feet.



WINDMILL NEAR ST. MALO Photo by E. M. Newman

The windmills of the low country of Brittany remind one of Holland. Stone houses and good roads are characteristic of this section

Yet today it is the spirit of the people, and not the wish of the politician, that permeates legislation in France, as in this country.

By ethical standards the progress of a nation is gauged by the uplift of its people. Primary factors in such progress are the conservation of health, the training of the mind, the development of morality, the advancement of the public weal, and the fostering of such ideals as shall stimulate beneficent aspirations. That nation stands supreme which best strengthens the weak, encourages virtue, recognizes service, represses evil, preserves peace, and deals justly with persons and nations.

THE REAL FRANCE

This article treats not of the striking graces and artistic beauties for which France is famous, but of every-day life conditions of its people; and, as it is written solely for the members of the National Geographic Society, such comparisons as are made will be with similar subjects in the United States.

First, a few words as to how a knowledge of France has been gained. Five months of intense activity in early manhood made me familiar with external France, and be it understood that this does not mean Paris, which is no longer France. The repository and guardian of art treasures which in extent, variety, and beauty are elsewhere unsurpassed; enriched with historic material of priceless value; adorned by artistic monuments and noble structures; beautified by broad streets and perfect parks; the center of culture for the nation; the fashion dictator for the world; the seat of government and so of power; scarcely surpassed elsewhere as a financial center—Paris is at once the envy and admiration of France, as indeed of the world. Still, it is not France. Its treasures, spiritual and material, are but the accumulated gifts of France. Paris proudly proffers for the admiration of humanity in tangible form the labors and the aspirations of the French people, which that people have produced by the sweat of their bodies,

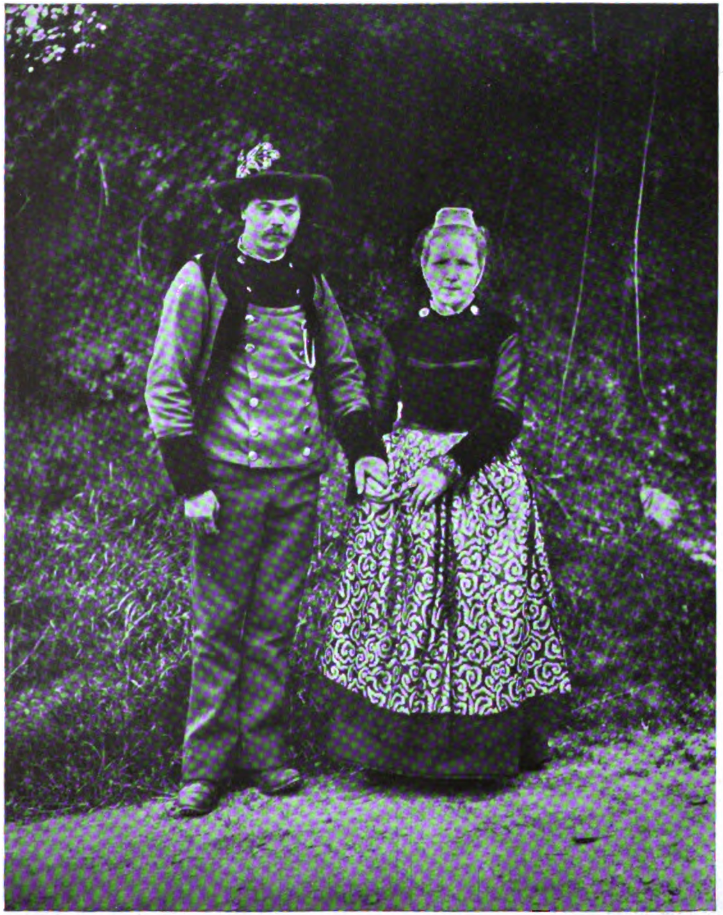


Photo by E. M Newman

PEASANT COUPLE AT QUIMPER

Quimper has been pronounced "a pleasant river-side city of tables and gables." Its peasant population love good clothes, and while the cut would never pass muster in the Rue la Paix, the quality of their Sunday clothes is good, with a dash of color, a bit of lace, and more than a touch of velvet to set them off.

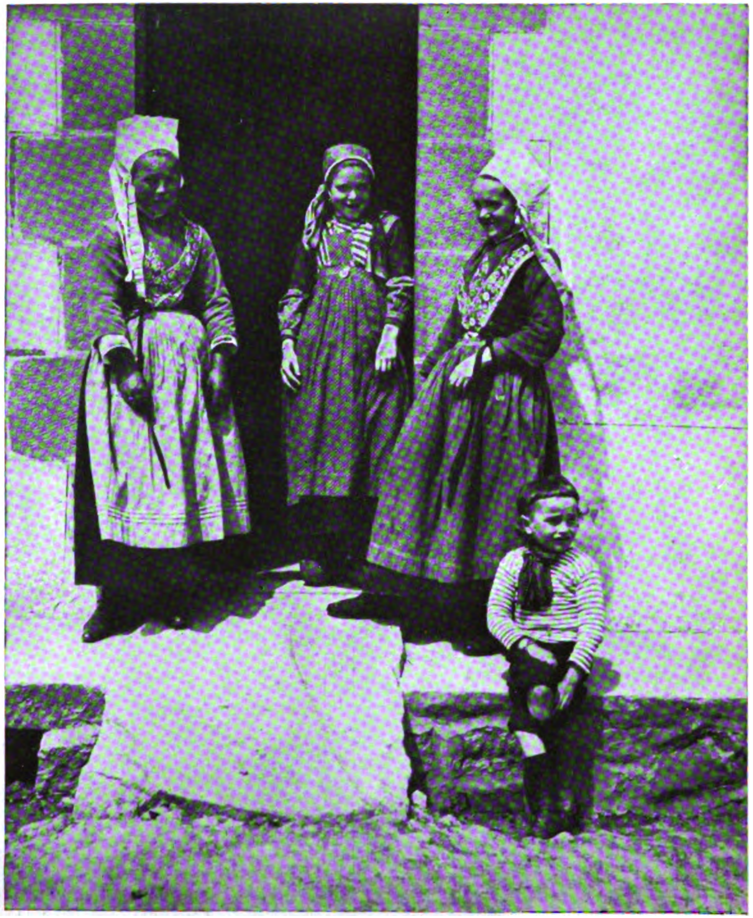


Photo by E. M. Newman

PEASANTS AT PLOUGASTEL

Plougastel is a small village not far from Brest, whose inhabitants are noted for their quaint costumes. Every year, on June 24, they hold a "pardon" of St. John, and in their cemetery they have a curious monumental Calvary, embellished by numerous statuettes and reliefs.

A PEACEFUL SABBATH DAY IN BRITTANY

Photo by E. M. Newman

the anguish of their minds, and the agony of their souls.

AMONG WORK-A-DAY FOLK

With a circular ticket as a base, I wandered to and fro for months, tarrying at inns for a franc for a room and often paying less for a meal. And thus the people were seen and talked with. If the good King of Yvetot was not seated in sweet content under the fragrant apple trees of Normandy, there were ruddy-faced folk of peaceful aspect. Along the flint-lined beaches of the Channel were the bourgeoisie on vacation—sleek, smooth, and well-garmented, in contrast with the hardy toilers of the sea. The sun-burnt, weather-beaten sailors were of the type of Bans d'Islande, while there were hale, bare-footed women — oyster-catchers, weed-gatherers, fish-bearers.

There were other scenes in the south. It was a new world, to breathe the air of the glorious Pyrenees, even though there were sad and motley groups at Lourdes, then in its infancy of miraculous cures. With anxious eagerness and speechless voice many came to the sacred spring, whence some went away with bright hopes and grateful thanks.

Less thrilling were the walks through the "dead cities" and over the vine-clad, grape-clustered, sun-favored slopes of Côte-d'Or and along the noisy quays of the great port of Marseilles. One got a sense of the sweet devotion, especially of the women, who always stopped for a prayer at wayside shrines and who have filled with innumerable *ex-votos* the sailors' sanctuary, the church of Notre Dame de la Garde. Climbing the picturesque cornice road up the 500 feet, wives, mothers, and children of the Marseillaise sailors bear their gifts—of sorrow for the lost, of thanks for the saved, at sea.

AMONG LANDES SHEPHERDS

It was an unique day, when tarrying in the sandy marshes of Landes. They talked little, those stolid, acrobatic shepherds, who in wondrous fashion, uplifted on lofty stilts, guard their flocks. One first likens them to human-headed ostriches, stalking across flooded plains. Quite dextrous—indeed, circus-like—was their way of eating their meals or making music without dismounting (p. 211).

Quiet and idyllic were the walks along the fruit-lined roadways of Touraine and strolls through the gardens and grounds of the royal châteaus, famous equally in the domains of art and of history. Along the level tow-path of placid canals was another phase, when one watched—for they did not talk—the *trackers*. They were a misshapen, shaggy folk (now and then a woman, dreadful to see), these human beasts of burden, who, with bowed bodies and with heads protruding from the canvas harness, wearily towed their heavy-laden barges. What wonder that their exhausted bodies and torpid minds nightly sought the Lethean sleep of alcohol, to drown the memory of today and the thought of tomorrow. Twentieth-century France has fortunately replaced these awful drains on human endurance.

There is no section of France that, in part, was not known first hand, though such knowledge was superficial. But the people were seen, and if at rare times experiences with them were not to one's taste, they were at least illuminating. Two sources of vexation of today were wanting—Cook's tourists and automobiles. If the language was badly spoken, the words came forth fluently and intercourse was easy. There was always a "Good day" and a "God be with you," as one passed a home group of busy women. The tiny, sabot-shod babes clattered noisily around the yard, while their elders used the staff and spindle or kept up their everlasting knitting. Few women surpass the French peasant in unremitting work.

COURTESY AND CURIOSITY

True it was that rude speech followed unintentional intrusion on property, but courtesy, kindness, geniality, hospitality, and intelligence were the rule. A fair-speaking stranger met throughout France a fair-dealing reception. Courtesy was not always unmixed with curiosity, at times a trifle coarse. Kindness was shown by people upholding the rights of an alien in my single wrangle. Hospitality extended by offers of fruit and of wine. Geniality was then a French quality, though in recent years its display toward travelers has somewhat abated. Is the French peasant or the American tourist most to blame?

True it is that peasants differ widely—in speech, in dress, in looks, and in customs—but they are all French There were seen the somber, melancholy Breton, the ruddy-faced Norman, the over-witty Burgundian, the raucous-speaking Auvergnat, and the mountaineering Savoyard.

INTELLIGENT PEASANTS

The peasants intelligent? Yes, though not in Parisian form. Provincial and uncultured to a marked degree, they were shrewd, observing, and well-informed along local lines. Are the mountaineers and those remote from commercial centers in the United States unintelligent because unfamiliar with city knowledge?

As to honesty, an express train was delayed five minutes at a French station, evoking from my compartment comrades querulous comments on unreasonable delays in Europe, until my senses of humor and of shame were awakened. The train was held to locate me as the owner of a purse that had been left in the buffet. It was more trying that the officials in most courteous language declined to receive an offered reward for the honest employee.

As a whole, there was no idleness, infrequent signs of poverty, and an apparent absence of dire misery in France of the seventies. They were a vigorous, intelligent, thrifty, and progressive people.

PEASANTS AT VIRE

Photo by E. M. Newman

These are types of the people who work in the textile factories of Vire, which manufacture much of the blue cloth from which the uniforms of the French army are made

In the forty following years an almost uninterrupted attention to current French publications, supplemented by a dozen visits to France, have kept me somewhat familiar with the march of events and the trend of affairs—politics and religion largely excepted.

WOMEN IN FRANCE

Although in several countries the feminist movement has become a political problem, there are other phases than those of sentiment and of justice, important as these are. The economic question has received attention in France, while that of advisability is still debated.

Not to waste capital is an essential factor of progress. It is the man who makes the nation, and the most vital element in the life of a people is the policy that insures a supply of men. The conservation of women is absolutely essential, if a nation strives to defer decadence and avoid downfall. Within the last half century, since economic conditions have so materially altered, nations have come to realize that conservation is a pressing problem for the commonwealth.

NECESSITY OF FEMALE LABOR

In addition to their strictly feminine pursuits, an enormous amount of manual labor falls on French women, since the men pass nearly a sixth of their adult life in obligatory military service. Thoughtful men have realized the hardships and unwisdom of the situation, and in late years woman's status has materially improved. Great credit must be accorded France, whether she be animated by an increased sense of justice or only in solving an economic problem.

The importance and magnitude of woman's work may be judged from the cen-

A NORMAN FARM SCENE Photo by E. M. Newman

The peace and quiet of yesterday has given place to war's wild alarums, and from tens of thousands of such homes as this the able-bodied men have gone to the defense of their country.

sus of 1906, which registered 4,150,000 female laborers. In percentages they were distributed as follows: Business, etc., 13; working in home, 13; servants, 18; agriculture, 23; in factories, etc., 33. From an American standpoint, their wages are pitiful—58 cents a day in and around Paris and about 40 cents elsewhere.

It is creditable that the first modification of the inadequate labor law of 1848 was in the interest of women and children. Night work was much restricted, labor in underground mines forbidden by the law of 1874, and the hours of work reduced to 12 (now 10). Moreover, the law was soon amended to forbid women from working in an environment which might be injurious to health, to person, or to morals.

In recent years the so-called Sunday law forbids work beyond six days per week and makes voluntary labor on recognized fête-days. The compensation laws care for women, whether themselves workers or as dependents. Agricultural work yet bears hard on them, but co-operation has done much for their relief, and very rarely in these days is a woman seen in the heart-breaking, body-destroying toil of harrow-dragging, etc., not infrequent in the past.

Compulsory education, enlargement of facilities therefor, and age limitations have benefited women. An interesting sidelight appears in the statistics of illiterate brides, who sign the register with a cross; while they numbered 25 per cent in 1880, the number was reduced to 4 per cent in 1906.

A WIFE'S LEGAL RIGHTS

The legal status of married women in France was most deplorable until the end

CHILDREN AT LE FAOUET Photo by E. M. Newman

Children are not so much in evidence in France as in Germany. During a recent year there were only 197 living births for each 10,000 people in France. During the same year there were 305 living births for each 10.000 people in Germany.

of the nineteenth century. Discriminatory and inequitable laws imposed tyrannous regulations on their most intimate life relations. Marital and domestic affairs were entirely dominated by the husband, whose control of property and of children was practically absolute. Legally the married woman was a nonentity, and not only did not have a right to spend her income, but not even her personal earnings.

Fortunately Frenchmen of the present generation have acted with progressive intelligence, and although the legal status of the married woman still falls below that accorded by American law, yet the French woman's lot has much improved. In 1884 there was eliminated from the *Code Civil* an iniquitous discrimination in favor of guilty men in connection with divorces for cause. In 1891 it was granted that a woman had an equitable right in her husband's estate—a right hitherto denied.

It appears surprising that it was not until 1907 that the civil-status law was extended so as to secure to women their personal earnings. A woman might slave all day, as a laundress or at manual labor, with her husband standing idly by, with the right—and in some cases scandalously exercised—to demand her wages and to squander them at will on her rivals. Fortunately such abasement has passed.

A married woman can now transact business, dispose of her property, and at times even be the guardian of her children. It was somewhat of a blow to the ultra conservatives when it was officially declared that marriage was an equitable contract, and that "man and wife owe

BRITTANY: SAD DAYS FOR SUCH AS THESE

Looking longingly into the distance for the father who went to the front mayhap never to return

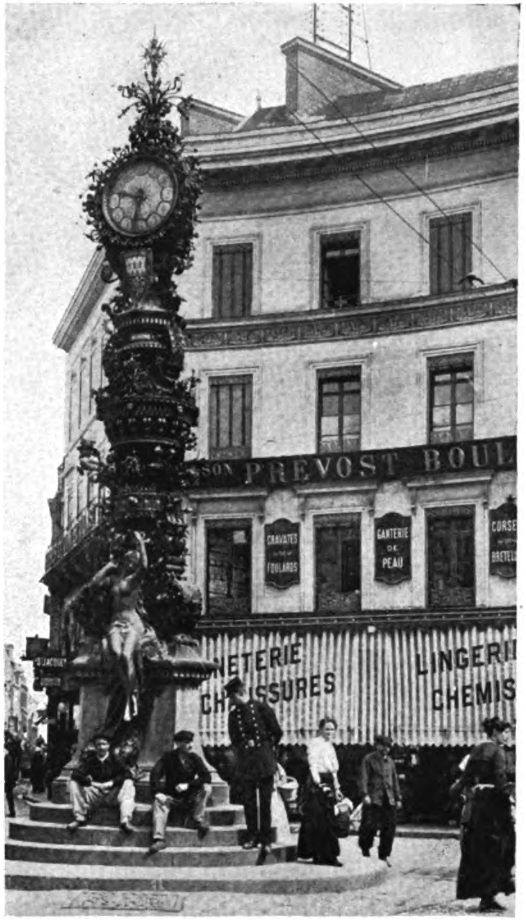

PREVOST BOUL
CRAVATES FOULARDS
GANTERIE DE PEAU
LINGERIE
CHEMIS
NETERIE

Photo by E. M. Newman

OLD CLOCK: AMIENS

A clock that tells at once the time of day and of the love of the ornate that inhabits the Frenchman's bosom each other mutual fidelity, aid, and counsel."

CIVIL STATUS OF WOMEN

French women are said to be largely free from active movements to foster further advance by methods excitant of bitterness, but they are steadily striving to remove such legal disabilities as affect their personal or professional life; from year to year new successes mark their righteous campaigns.

Hundreds of highly educated women, trained mostly at Sévres, enter the learned professions. Mme. Curie's professorship in the Sorbonne, where she reflects high credit on scientific research, is a typical and not an isolated case of women engaged in higher instruction. Women may be teachers and scientists, doctors and lawyers, but they cannot be judges, though exceptionally they are on the arbitration courts. Beginning with commercial tribunals in 1898, their eligibility now includes membership in the supreme councils of labor, of coöperation, of arts and manufacturers, of public instruction, of conciliation courts, and other public positions of dignity and importance.

It is interesting to note that under the workman's compensation law the married woman not only receives 20 per cent in pension of her deceased husband's wages, but that her death confers an equal pension on her surviving husband.

One of the most significant marks of change in public opinion and of healthy growth in morality is the granting of a civil status to a betrayed woman. The recent law of November 8, 1912, enables her for the first time in modern France to bring suit for herself and for her child against the guilty father.

PROTECTING CHILDREN

The protection of children, which began legislatively more than 20 years since, has more and more engaged the serious attention of French statesmen. Then more than 600,000 children under 16 years of age were crippling their bodies and warping their minds by arduous prolonged labor in mines, factories, etc. The law of 1874 lessened their day's work to 12 hours (now 10), forbade underground mines to them, as well as labor under insanitary or harmful conditions as to occupation or surroundings. Two years later children were excluded from establishments equipped with dangerous machinery. Then came the compulsory education law, which benefited the child by postponing until 13 years his life of labor by training his faculties and increasing his useful knowledge. Later the welcome and righteous Sunday law insured weekly a day of entire change, if not of recreation, for the child.

Meanwhile generous and far-reaching legislation has materially reduced the frightful mortality of infants, due to various causes. The most widely known was the system of nurse-farming, which gave rise to the horrible scandals of the "angel makers." Under the Roussel law, the reduction in the mortality of the *protected* infants (under one year in age) was greater by 3 per cent than for the children of the whole nation, the mortality being as follows: 1897, 24.3 per cent, and 1908, 17.0 per cent for the protected, as against respective means of 17.2 per cent and 13.1 per cent for the nation. This reform is one of the most creditable of recent years.

One of the most remarkable reversals of a policy over a century old was the law of July 2, 1907. It marked a long moral stride when the law gave a girl-mother a right to demand that her betrayer should provide for the support of his child. It is admitted, apart from its justice, that this law will do much, through the protection and guardianship of natural children, to reduce the rising tide of juvenile criminals, who come in such disproportionally large numbers from this unfortunate class. The largest percentage of the offenses of juveniles (42 per cent) is for theft, which unchecked in children rises in France to a maximum in youths of 18 to 24 years.

JUVENILE REFORM

For nearly a quarter of a century France has been endeavoring, under the Berenger law, to reform budding criminals by suspension of sentences against juveniles for five years or until a relapse

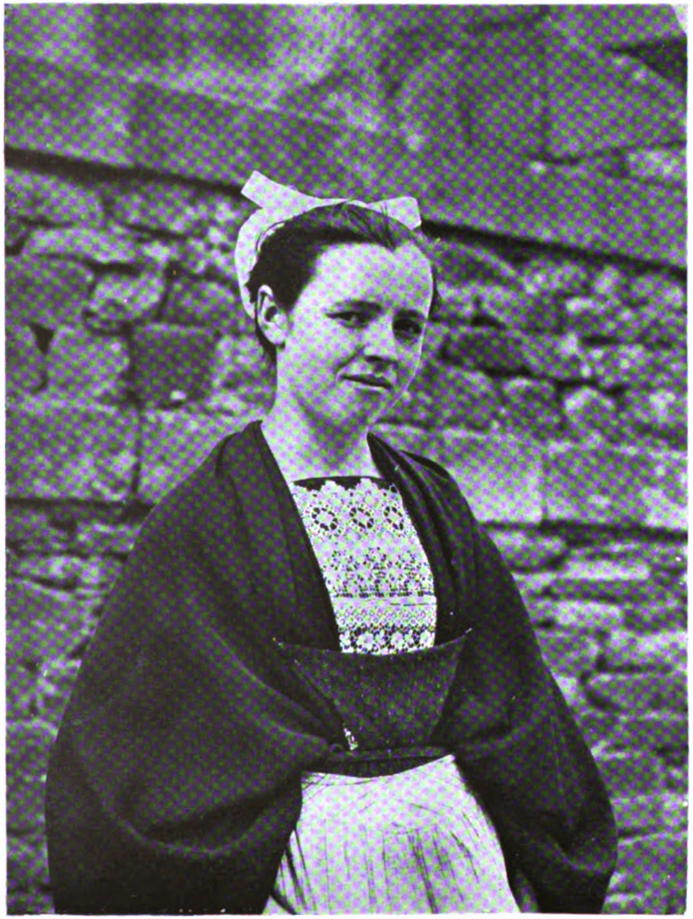


Photo by E. M. Newman

GIRL AT ST. THEGONNEC

The people of St. Thegonnec are a simple folk. They have a handsome church of the Renaissance, in the yard of which there is a curious triumphal arch, an ossuary, a "Calvary," and a "Holy Sepulcher."

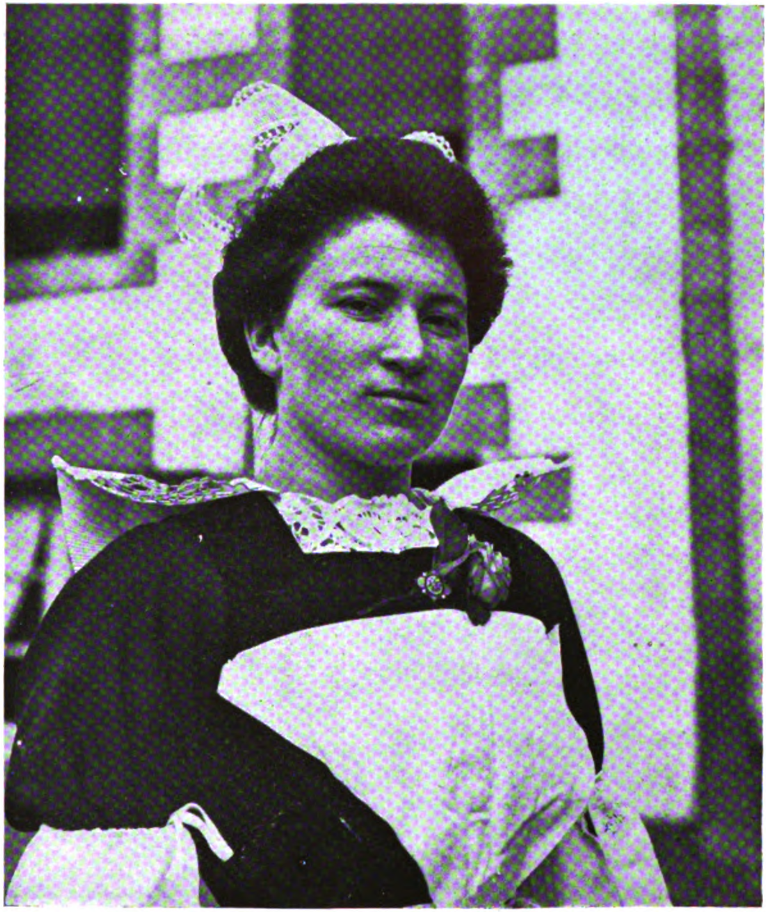


Photo by E. M. Newman

GIRL AT PONT AVEN

The inhabitants of this quaint little town of western France, a short distance off the road from Brest to Nantes, have maintained the place in such primitive style that it is a favorite resort of artists. Its impetuous stream, the Aven, and its quaint mills have been painted by thousands of brushes.

occurs. More than 30 per cent of such criminals receive the reprieve, and it is gratifying to record that the backsliders of recent years number but one in eleven.

A further progressive step was taken when the French law, attacking white slavery, organized a system of protection, of education, and of reform for delinquent girls under 16 years of age, whose offenses, said the court, "Cannot be considered a crime, but as due to lack of education."

Destitution among the orphans of workmen dying of injuries is to a certain extent relieved by the award to the child of a pension ranging from 10 to 20 per cent of the annual wage of the deceased parent.

CHILD LABOR LAWS

While the moral and intellectual welfare of American children has always been guarded, perhaps better now than ever before, the law has left their life of labor largely under the control of individual and corporate influence — often selfish and unwise. The awakened conscience has caused the institution of a National Children's Bureau, with an experienced chief, thus promising progressive improvements in current unsatisfactory conditions; but there are no less than five States in which the lawful working age of children is 12 years, one year earlier than France permits. In 39 States the legal age for labor is 14 years, and seven or more permit night work at that tender age.

When, in addition to legal provisions, one considers the unceasing supervision and thorough system exercised by French mothers, are we not forced to admit that French children are better trained for their life careers than are ours? Let us hope that the same splendid spirit may soon animate all America in efforts properly to protect, efficiently to educate, and sanely to rear the children of our land. As France has listened, so may we—to the "Cry of the Children":

Our blood splashes upward, O gold-heaper,
And your purple shows your path;
But the children's sob in the silence curses deeper
Than the strong man in his wrath.

THE FRENCH WORKMAN

A distinguished French exponent of Shakespeare, Émile Montégut, in one of his delightful and keen analyses of world-types, many years since emphasized the value to a nation of individuality wherein character, independence, and originality are inextricably combined. He indicated the farmers of New England as most prolific in such creations, but under the changed conditions of today one hazards little in suggesting France as similarly prolific.

The great economist, Yves Guyot, states that in 1906 only 54 per cent of the French industrial world were employees. Small individual workshops, fast disappearing with us, increase steadily, though slowly, in France, thus indicating the progress of personal prosperity—the best guarantee of the stability of democracy. Trained in his special technique, endowed with artistic tastes, stimulated by prizes, in large part his own master, the French workman is free to work out his ideas and often does so to advantage. Although poorly paid, he rarely accepts tempting offers to emigrate, but steadily improves at home in comfort, in wealth, and in higher standards of living. New methods, cheap power, modern machinery, and industry tell the tale.

INDUSTRIAL INSURANCE

We were wont to pity the down-trodden laborer of Europe in contrast with the free, individual workman at home; yet the French workman enjoys advantages of no mean order over the American as regards unemployment, employee insurance, compensation for injuries, old-age pensions, and last, but not least, frugal living through low rents, coöperation, and vastly superior market facilities.

The United States initiated this year its first concerted movement to solve the serious problem of unemployment, "by bringing the jobless man to the manless job." France has for years had a central Employment Bureau, which now numbers 126 well-distributed exchanges. Our census shows that in 1900 there were six million of laborers at some period of the year out of work. The same conditions

BRITTANY: ALL HANDS MUST WORK NOW

The simple life in all its simplicity is lived in Brittany. When there is nothing else to do, the distaff and the spinning-wheel offer opportunity of useful occupation. The people live as our people lived a hundred years ago.

existed in 1905, and, though improvements had taken place, only half of the States had made any provision to remedy the evil.

OLD AGE PENSIONS

France passed an old-age pension as early as 1886. Most important to the workman is the question of being compensated for injuries or death through labor. France enacted a compensation law in 1898, and it was not until 1908 that the United States enacted provisions which inadequately cover only one-quarter of its employees. Though deaths and disabilities ran yearly into the tens of thousands, no State protected its workmen until 1911, and despite unceasing agitation for justice by the workmen, only 22 States have such compensation laws—10 passed within the past 12 months.

Relief from overwork is afforded by the Sunday law, thought by some to be the most potent reform for years. The Revolutionists of 1792 abolished Sunday and unsuccessfully tried one day of rest in ten. The law of 1906, better advised, "accords to every French laborer the inalienable right to one day's rest each week, and that to be on Sunday when not impracticable."

Persistent efforts have been made to avoid labor disputes, so frequent and bitter in late years. A most beneficial institution is the *Conseils de Prud'hommes* (Conciliation Courts), which adjust trade disputes between workmen and masters.

BRETON CHILDREN Photo by E. M. Newman

The children of Breton have little to boast of in the style or fit of their clothes, but when it comes to health and contentment they compare with the children of any other region

Established at every industrial center, and composed equally of masters and workmen, each class elects its own members of these courts, the presidency alternating from year to year between the two classes. Appeals are permitted only on amounts exceeding 200 francs. Most cases are satisfactorily adjusted, but when the vote is equally divided the case is retried, with a selected justice of the peace as the deciding arbitrator.

THE SCHOOLS OF FRANCE

The elimination of religious instruction from the national schools has been pursued to a successful end, though bitterly contested. Of the 5,629,906 pupils in 1909, only 2 per cent were taught in authorized religious establishments. Primary instruction is obligatory between the ages of 7 and 13. The announced aims of the public-school system are to cultivate patriotism, to instill morality, to teach tolerance, to make French language uniform, to develop accurate observation, and to enlarge spheres of interest. Doubtless it has shortcomings, but the system has greatly reduced the percentages of ignorance among the people, the illiterate conscripts falling from 16.85 per cent in 1880 to 4.40 per cent in 1908.

The *Financial Chronicle* dwells on the remarkable advances of France along industrial and educational lines as due largely to the efficacy of her education. Stating that its basic schools of research in various branches have improved methods and enlarged the scope of industry, the *Chronicle* adds that it affords a "deep lesson for America."

Of 86 technical schools no less than 57, covering all branches of modern industry, devote their efforts to grounding their 12,000 students in the maintenance of artistic standards, in the perfection of methods, and especially to the training of managers, etc. Through the medium of these institutions artisans and workmen, foremen and managers, manufacturers and dealers, are not only kept familiar with alien methods and inventions, but are instilled with artistic ideas, subjected to cultured influences, and stimulated to perfection of plan and of accomplishment.

The typical French artisan takes pride in his work, and it is characteristic of

BRITTANY: HARD WORK, BUT HAPPY FACES

The fisherwomen and oyster-gatherers of Brittany are a hardy race of women, comparable to our own women of the mountain districts, who are able to bear their children, look after their household duties, feed the pigs and chickens, milk the cows, and occasionally lend a hand in the field in the busy seasons.

that pride that the only statue of Louis XIV that escaped destruction in the Revolution which established the present Republic was that in Lyons. Made by Lyonnaise Lemot, local pride in its beauty, as wrought by a fellow-citizen, saved it for posterity.

THE FRENCH FARMER

With pardonable pride the United States dwells on its valuable work in the interests of the farmer, in the form of 48 State experimental stations, with the scientific bureaus of the Department of Agriculture ready to give needed advice.

France has for years acted on the basis presented by one of its writers, that "the amelioration of the lot of humanity has, as a condition of primary importance, the productivity of man." Crowned by its five national universities of agriculture, the French system fosters practically its

BRITTANY: YOKE-MATES INDEED

Life is no bed of roses for the peasants of Brittany. For the most part their land holdings are too small to enable them to keep horses, and their income is too little to enable them to hire a team at seeding time, so they patiently drag their harrows back and forth with their own hands until the seed bed is ready for the sowing.

farming and forestal interests through the activities of more than 250 separate institutions, including an experimental station for each of the 87 departments.

What wonder that France raises nearly enough grain for its own use, and that its wheat yield has largely increased per acre in recent years!

Such results have grown from improved culture, chemical manures, modern machinery, and suppression of fallows. While migration to cities occurs somewhat, there has been no diminution of small holdings in more than three-fourths of the provinces. Utilizing the French love of decorations, a most useful practice, the conferring of the order of *Distinguished Agriculturist* has for years stimulated intensive farming, as have the establishment of corn and tomato clubs in the United States.

THE PEOPLE'S RECREATIONS

While life first seeks the material, yet its endless activities are such in this age as to demand distraction for mind and body, to insure the sane development of a people. The recreations of the French are simpler and nearer to nature than our own. The great masses are devoted to frequent and inexpensive outings in the country, or, when unavailable, find in enormous numbers quiet pleasure in the daily concerts, which add another charm to the public grounds. The air of contentment, the pervading gaiety, the simplicity of entertainment, the personal courtesy, the correctness of deportment, and the excellent order among the great masses of pleasure-seekers are conditions that impress every alien observer.

More and more these near-by outings have expanded into journeys, and to meet this change there have been formed not only excellent travel clubs, but travel bureaus have been established in the Department of Public Works. The French now make endless excursions—to the Alps and Pyrenees, to the beaches from

Calais to Bayonne, and by increasing thousands to Great Britain. Reduced fares for more than one traveling on a ticket favors family parties. Pilgrimages to Lourdes, to Rome, etc., are made by tens of thousands where formerly there were hundreds.

PUBLIC BUILDINGS OPEN

The prevision of the government and the generosity of patriotic Frenchmen have thrown open to the public many historic buildings. An extraordinary interest in the châteaux of Touraine has turned French travel to these noble structures, among which Amboise and Blois are strikingly preëminent.

The immense front of Blois, uplifted in part by its wondrous spiral staircase, is surmounted by grinning gargoyles of fascinating hideousness. Beautified to the eye by a bewildering wealth of ornamentation, Blois remains attainted in memory by the atrocious assassination therein of the Duke of Guise. Grandiose Amboise rises out of the golden sands of the blue Loire, with its gem-like chapel decorated with artistic traceries, wrought out like fretted lacework in the soft stone. If its annals are glorified by the pact of religious tolerance here signed in the sixteenth century, it too has its blot of blood, since from its most commanding gallery a decadent king, with the fairest-faced of queens, looked down one religious holiday on the worst spectacle seen in France for ages—the massacre of scores of the noblest of the land.

Where kings and dukes inspired terror by slaughter, now the people come in peace to enjoy.

LITERATURE

French thought has contributed priceless treasures to the knowledge and scholarship, to the pleasure and profit of the intellectual world, with no signs of decadence apparent.

As to books for the people, it may be proper to state that America falls far behind. In 1910 (with more published books than in 1911 in America) our record was one new work for each 7,295 persons, while France published nearly twice the percentage, one for each 3,809. Comparisons as to paper, type, illustrations, bindings, and price are not unfavorable to France.

Their love of good books is evident to any observer, and the passion for collecting is pronounced. In visiting the house of a professor, there were visible books numbering thousands, though he was not rich. Prince Roland Bonaparte in showing me his library did not inform me, until I asked, that he had 250,000 titles and a herbarium with more than a million mounted and labeled specimens. Both collections were models of that system so dear to typical Frenchmen.

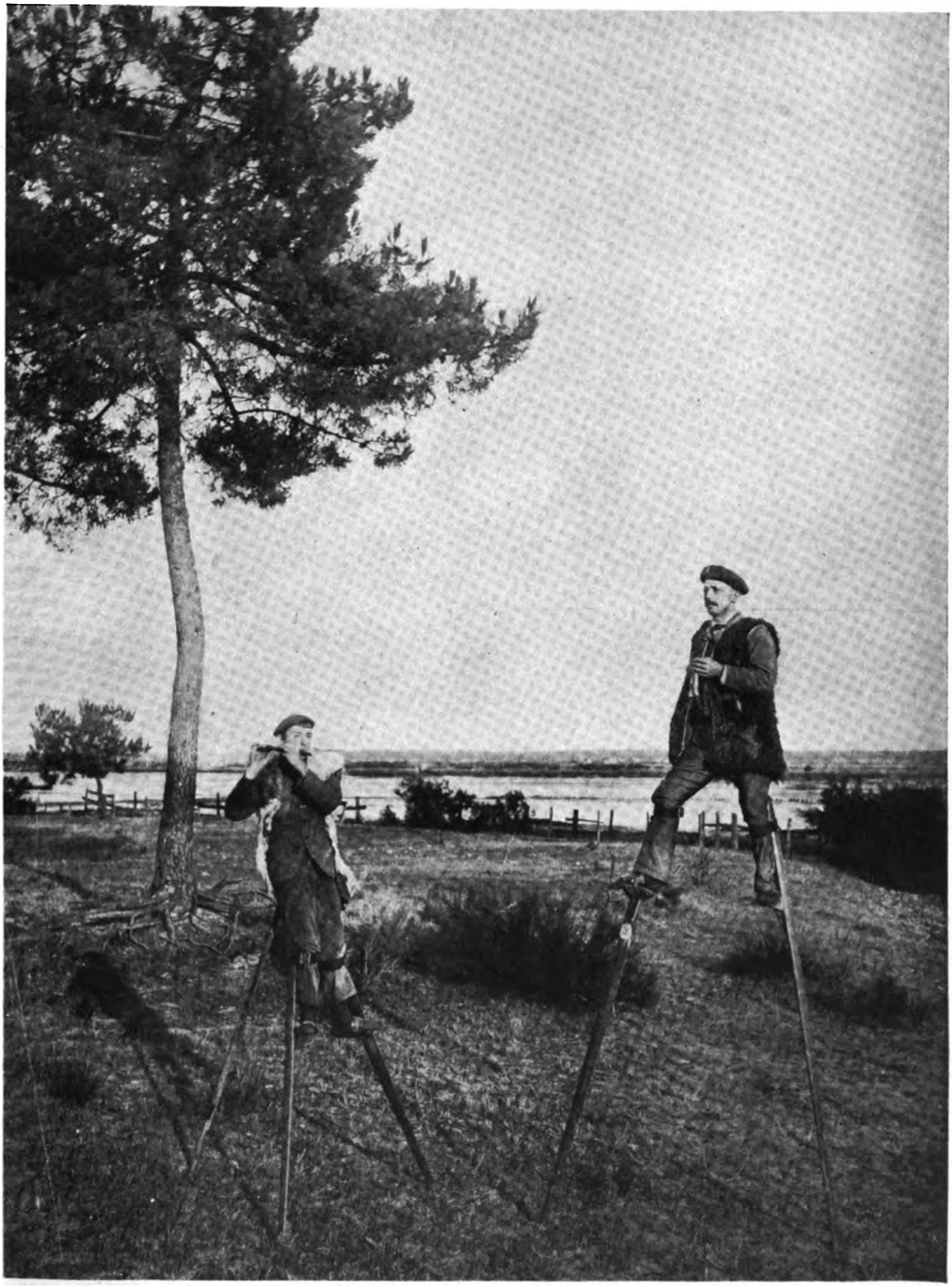
Some erroneously associate French literature with pornographic works, against which, greatly to its credit, France has lately waged a vigorous warfare.

THRIFT AND COMFORT

Thrift, almost to penuriousness, is a proverbial characteristic of the French peasant. Discussing changes with an alien of very long residence in France, he said that the most marked change in late years was the continuance of thrift with increase of comfort, especially as to table. Statistics confirm his judgment, as in late years the amount of meat has increased nearly one-half, while coffee, sugar, and tea are used to double or triple quantities.

General prosperity is best shown by the *caisses d'épargne* (petty banks), which, numbering 2,400, receive only limited sums from its clientele—wage-earners, petty tradesmen, etc. The depositors annually increase, in 1911 being 21.7 of the population. Despite the rising standard of living, the accumulations in these small banks had reached $774,405,000, averaging $19.55 to each man, woman, and child in France.

A recent essay by Dr. H. S. Williams treats of the savings of the four leading commercial countries. He says: "France has the lowest wage-scale and the highest percentage of savings-bank depositors, 34.6. America has by far the highest wage-scale and by far the lowest savings-bank depositors, 9.9."



STILT-WALKERS OF THE LANDES: ARCACHON, FRANCE

The home of stilt-walking at the present day is in the Department of Landes, in Gascony, where, owing to the impermeability of the subsoil, all low-lying districts are converted into marshes, compelling the shepherds, farmers, and marketmen to spend the greater part of their lives on stilts. These are strapped to the leg below the knee, the foot resting in a stirrup about five feet above the ground. Their wearers carry long staves with which they prop themselves up when resting. Silvain Dornon, a Landes baker, walked from Paris to Moscow in stilts in 58 days in 1891. Another Landes stilt-walker made 304 miles in less than 104 hours.

BRITTANY: THE BEAUTY OF PIETY

The Bretons are a deeply religious people, clinging tenaciously to the simple faith of old. Likewise they are extremely conservative, and the march of civilization passes by without drawing them away from their habits of dress, mode of living, or manners and customs.

BRITTANY: FOR AULD LANG SYNE

Though their lives are full of hardships, privations, and dangers, the fishermen of Brittany still are a contented lot of people, sociable and warm-hearted toward their fellows. They are a strong, sturdy race, holding as fast to the legends of an older time as the Medes and the Persians held fast to their laws.

PERSONAL FREEDOM

A personal experience of the restriction on individual liberty came with a shock in 1876. While arguing with French students, one expressed his keen regret that he could not have my presence at a private discussion of the subject. He added: "I have invited nineteen, and if you came we would all be arrested." "But," said I, "this is a scientific and not a political question!" It was startling to learn that not over twenty persons could assemble without a formal permit from the government. *Trusty* concierges, registration cards, police agents' identification books, and hotel spies were universal methods of surveillance to which aliens and natives were subjected. The *cabinet noir* no longer opens your letters, and liberty is general.

Freedom of assembly came in 1881, followed at intervals by other forms of liberty—of the press, of commercial organizations, of labor unions, etc. Unauthorized religious orders are refused freedom of action along special lines unless they conform to governmental regulations—a restriction that yet causes bitter strife.

FACTORS IN FRENCH DEVELOPMENT

Various French conditions can be mentioned by title only, as space fails. Vastly beneficial are coöperative operations in agriculture, commerce, trade, insurance, and other lines of public utility. Rural credit, road systems, and workmen's houses are factors of prosperity and producers of comfort. In Africa and in Asia France has displayed an amazing aptitude for prosperous colonization. If the area occupied and the peoples assimilated are unparalleled, so also are the absence of bloodshed and the success of pacific and tactful methods. Electoral reforms in progress look to minority representation. The intricate and oft-decried system of rewards and decorations exercise a stimulating influence in various fields of human effort—greatly to the advantage of the nation. As to philosophy, the late William James said: "Open Bergson and new horizons stretch forth on each page that you read."

Nor should the most marked of French failings be unnoticed. The national peril, alcohol, against which the *Ligue d'Alarme* is striving, with its subtlest agent—the body-weakening, mind-destroying absinthe; the untaxed distillation of raw brandy, defrauding the revenue and ruining the peasantry; the antique tax on doors and windows; the growing disregard for law; the rise of sabotage and labor struggles; toleration of gambling in various forms; the growing extravagance of public officials and the diminishing efficiency of governmental administration in business; the increasing regulation of labor; restrictions as to business methods, and encroachments on private industries—these are problems not foreign to American conditions, and their adjustment will interest those caring for social progress. It is striking evidence of the growth of individuality in France that the clamor and pressure for public employment have very materially diminished in late years, a tendency that would be welcomed with us.

THE UNCHANGING FRENCH SPIRIT

An American traveler can no more comprehend France than can the European, who traverses our vast regions and visits different communities, hope to know the United States. Nevertheless the opinion is hazarded that France of the twentieth century is experiencing a recurrence to that state of intensely human and idealistic activity which more than a century since caused it to support the American colonies in their Revolutionary struggle.

Nor does it appear that the present status of that progressive people can be more concisely set forth than by here utilizing another's description, which shows that the French spirit is always the same throughout the ages—and indeed is it not the spirit of aspiring humanity everywhere? The extract is from a memoir on Rochambeau and Washington, written by an honorary member of the National Geographic Society, the distinguished French Ambassador.

In his delightfully clear and concise style, M. Jusserand says of France in 1780: "An immense aspiration was overwhelming France for more equality, less privileges, simpler lives among the nobility, less hard lives for the mass of the people, more accessible knowledge, untrammeled discussion of matters of the common weal."

Such are the aspirations of the France of today, and public opinion—more and more powerful from day to day—is gradually impelling her legislators to accord fuller freedom along these lines. If these phases of French aspiration are so idealistic as to forecast ultimate failure, as hostile critics assert, she will contribute in the future as she has in the past to the world-wide diffusion of aspirations and experiences fruitful of good for oppressed humanity.

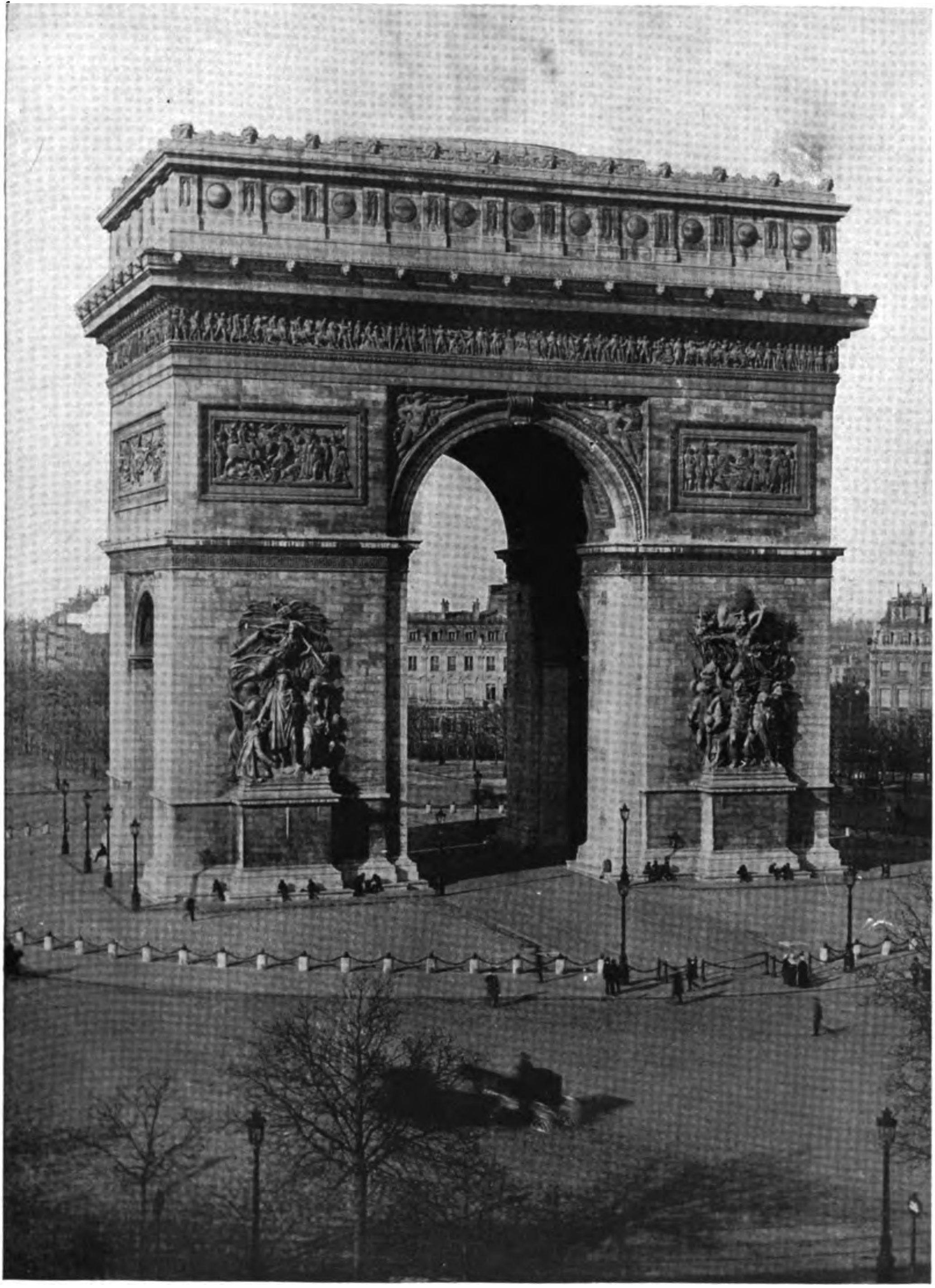


Photo and copyright by Underwood & Underwood

THE ARC DE TRIOMPHE DE L'ÉTOILE: PARIS

Standing in the center of the Place de l'Étoile, from which radiate the twelve great avenues of Paris, this triumphal arch is one of the beautiful sights of a beautiful capital. It is the largest arch in the world—being 162 feet high by 147 feet wide—and commemorates the triumphs of the Revolutionary and Napoleonic troops. The finest of the sculptures on its façades is that by François Rude, representing the departure of the volunteers in 1792.

Photo and copyright by Underwood & Underwood

A FRENCH HORSE MARKET

France gave to America that splendid line of Percheon horses that have contributed so much to the improvement of our stock

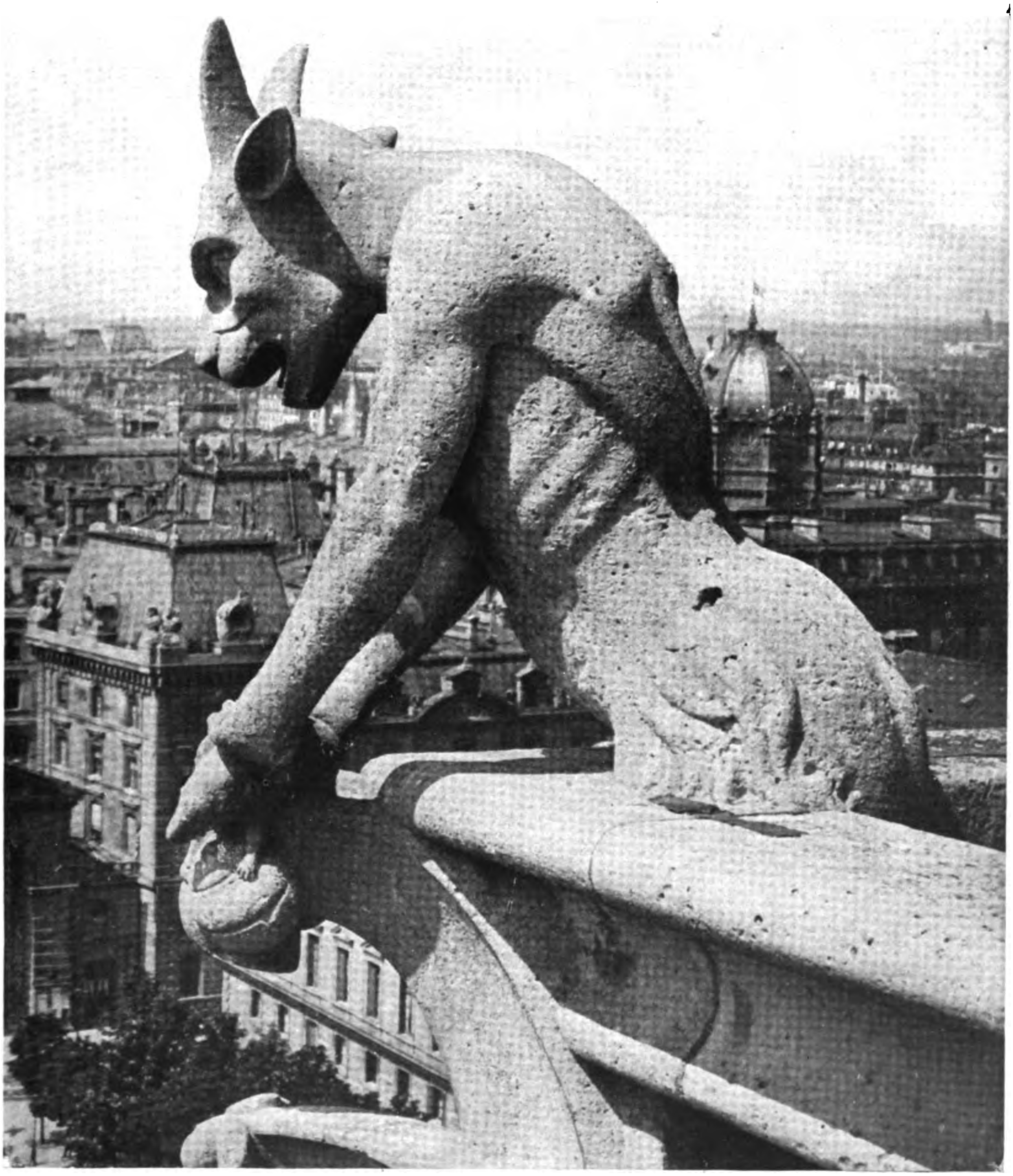


Photo and copyright by Underwood & Underwood

THE GARGOYLE AND HIS QUARRY: PARIS

The look on his face indicates that he would be far happier mingling in the life in the streets below than he is standing up at the cornice holding his prey

Photo and copyright by Underwood & Underwood

THE EIFFEL TOWER, PARIS: THE TALLEST STRUCTURE IN THE WORLD

Although built for show for the exposition of 1889, when no man even dreamed that it would ever be useful in war, it has become one of the chief wireless stations of the earth. It is 984 feet high and its base covers 2½ miles. From here wireless messages are sent to Petrograd.

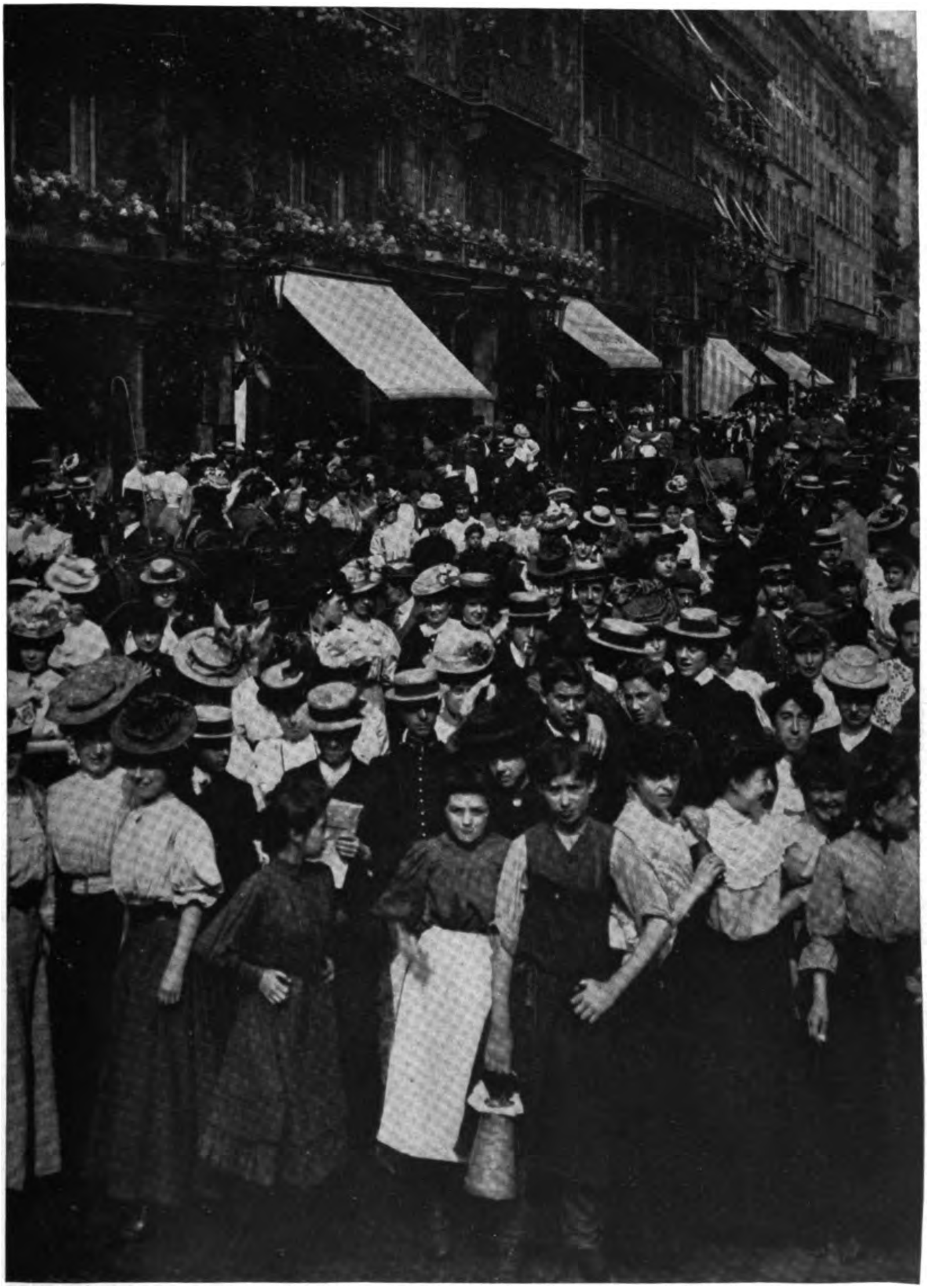


Photo and copyright by Underwood & Underwood

A CROWD ON RUE DE LA PAIX: PARIS

Where yesterday the thoughts of this great thoroughfare turned to the determination of what the world of women should wear tomorrow, today it can think only of the grim tragedy of war.

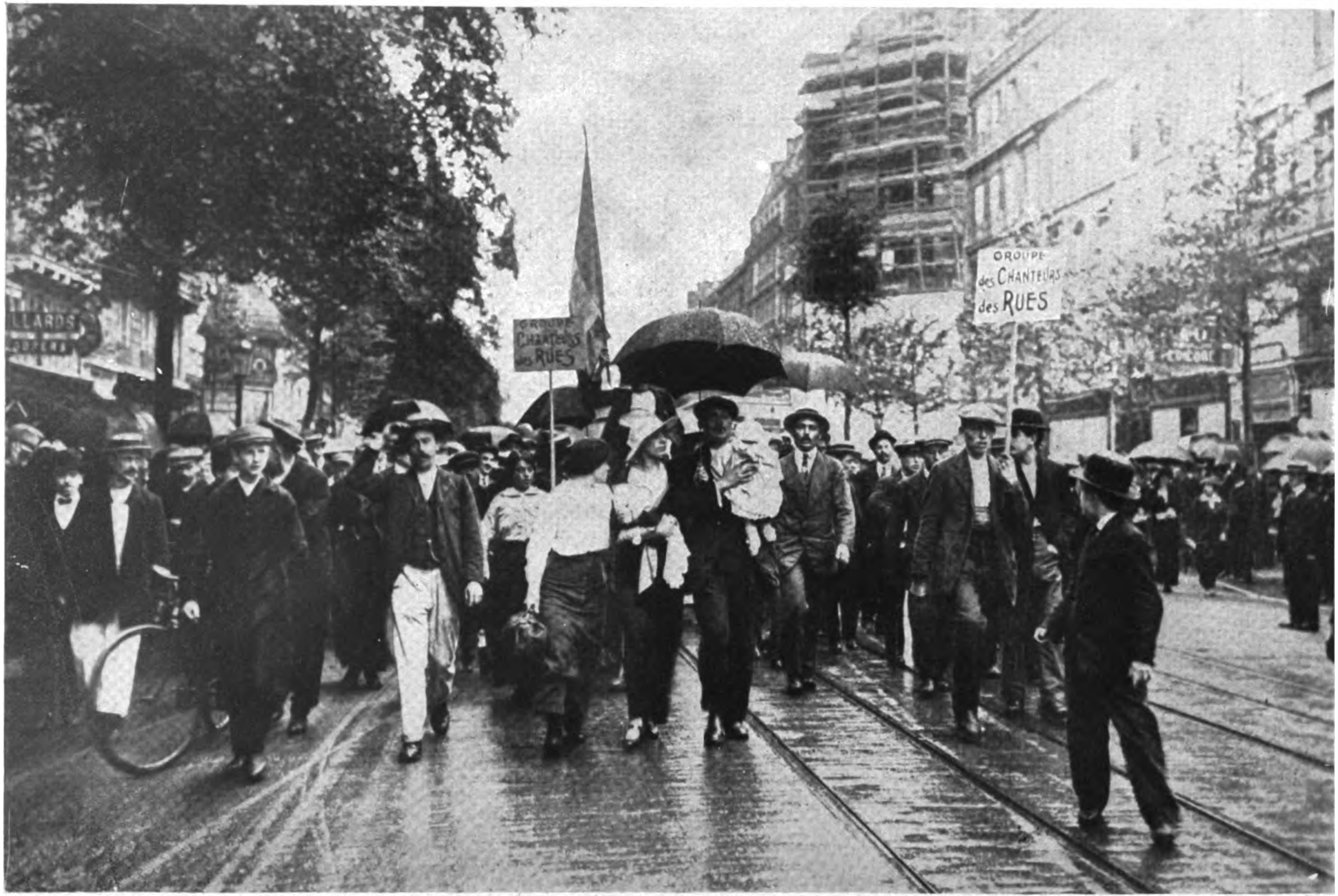

GROUPE
des CHANTEURS
des RUES
GROUPE
CHANTEURS
des RUES
BILLARDS

Photo and copyright by International News Service

WIVES ACCOMPANYING RESERVISTS TO THE STATION: PARIS

COIFFEUR
SSERIE BOUGENEA

Photo and copyright by International News Service

RESERVISTS ARRIVING AT PARIS: WHEN THE FRENCH WERE CALLED TO THE COLORS IT MEANT THAT ONE PERSON OUT OF TEN IN THE ENTIRE REPUBLIC HAD TO GO TO THE FRONT

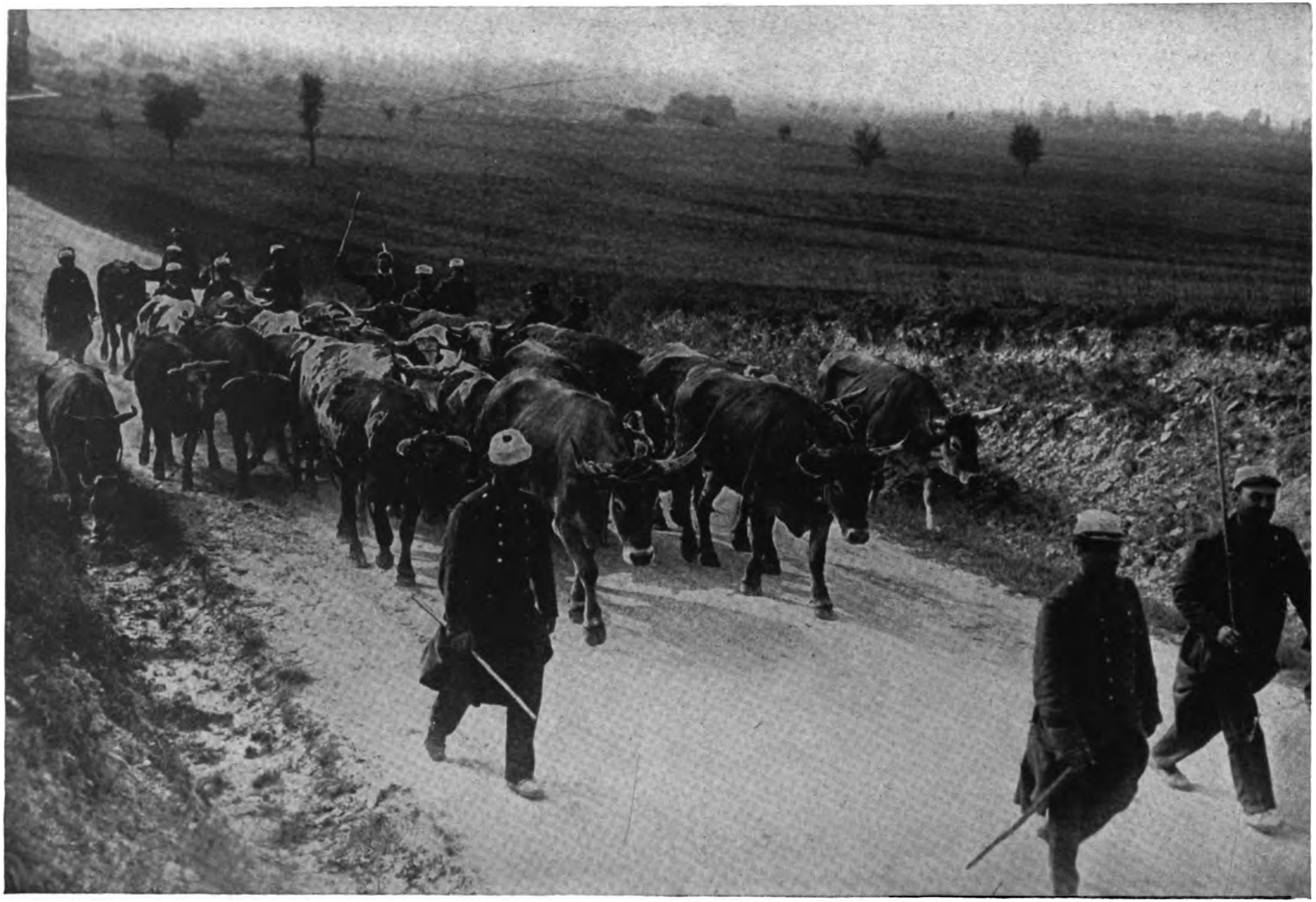


Photo and copyright by Underwood & Underwood

A FORAGING SQUAD RETURNING TO CAMP WITH A DROVE OF CATTLE TO FEED ONE OF THE FRENCH BRIGADES

Much of the beef for the French army comes into camp on the hoof rather than in refrigerator cars, although there is still the necessity of buying much dressed beef, both at home and abroad

BELGIUM: THE INNOCENT BYSTANDER

BY WILLIAM JOSEPH SHOWALTER

IF EVER a nation played the rôle and got the reward of the innocent bystander, the Kingdom of Belgium has done so since the mighty dogs of war of all the powerful nations of Europe were unleashed and set at one another's throats. When the avalanche of militant humanity reached their gates, the people of Belgium had no heart for war and no desire for participation in the fray; but the Belgians concluded that better is a war to the death and the sacrifice of all than a violated neutrality, and the result of that conclusion is being written in history in letters of blood. They have suffered as seldom a people have suffered before, and the end of that suffering seems not yet to be in sight, for their people have received the baptism of fire, and today they stand overpowered, overwhelmed, and helpless, yet undaunted, before a foe that outnumbers them many to one.

Who are these Belgians that defied the imperial German army as Ajax defied the lightning; that dared stake their all on maintaining their purpose of keeping out of the war, and who, trying to keep out, found themselves in the thickest of it? What is their brave country, what is their mode of living, and what their history?

Julius Cæsar himself bears early witness to their bravery and the cause of it in his comments on the Gallic wars. He says: "Gaul, taken as a whole, is divided into three parts, one of which is inhabited by the Belgæ, another by the Aquitani, and the third by a people who call themselves Celts. . . . Of these peoples the bravest are the Belgæ, and they are nearest the Germans, who dwell on the further side of the Rhine, and are constantly at war with them."

SOME SIZE COMPARISONS

The Belgium of today has an area less than one-fourth as great as Mississippi, and yet it has four times the population of that State. Twenty-two and a half countries like Belgium would be required to make a State like Texas, and if Texas were as densely populated as Belgium it would have as many people as the United States and Germany together now possess. If the entire United States had as many people to the square mile as Belgium — that is, continental United States, exclusive of Alaska—we would have more people here than there are in the entire world today. You could concentrate all the people of the seven seas and of all the continents here and still have room for enough more to repopulate the continent of Europe as it now stands.

It must follow from this that such a vast population, living within such narrow confines—7,579,000 souls within an area of 11,373 square miles—must be a frugal people, accustomed to self-denial, skilled in the art of economical living, and masters of the science of intensive industry; yet with all this density of population, with all the exactions of forced economy, they are a people who had so ordered their relations with one another and with their government that happiness and contentment seemed to dwell with them as with but few other peoples, and this in spite of diverse descent and diverse tongues.

DIVERSE TONGUES UNITED

The area of Belgium is only 11,373 square miles, while its population is 7,579,000, and yet within this small territory, smaller in area than Massachusetts and Connecticut, there are nearly three million Flemings who cannot talk with their compatriot Walloons, and about as many Walloons who cannot hold converse with their countrymen Flemings. In their habits of mind and their methods of gaining a livelihood the two peoples differ as widely as the English and the French, and in their speech they are as different as the Germans and the Scandinavians; and yet there is a tie that has bound them together for generations,

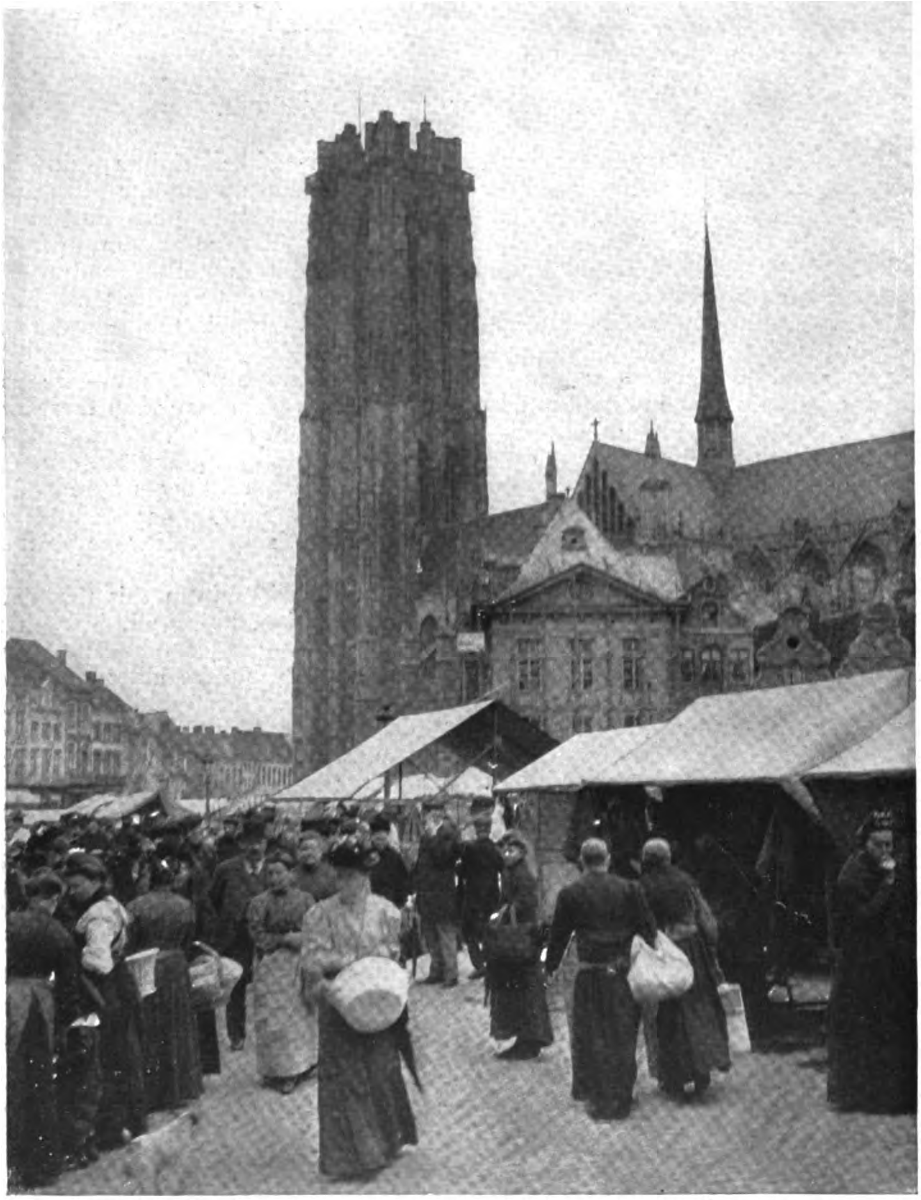
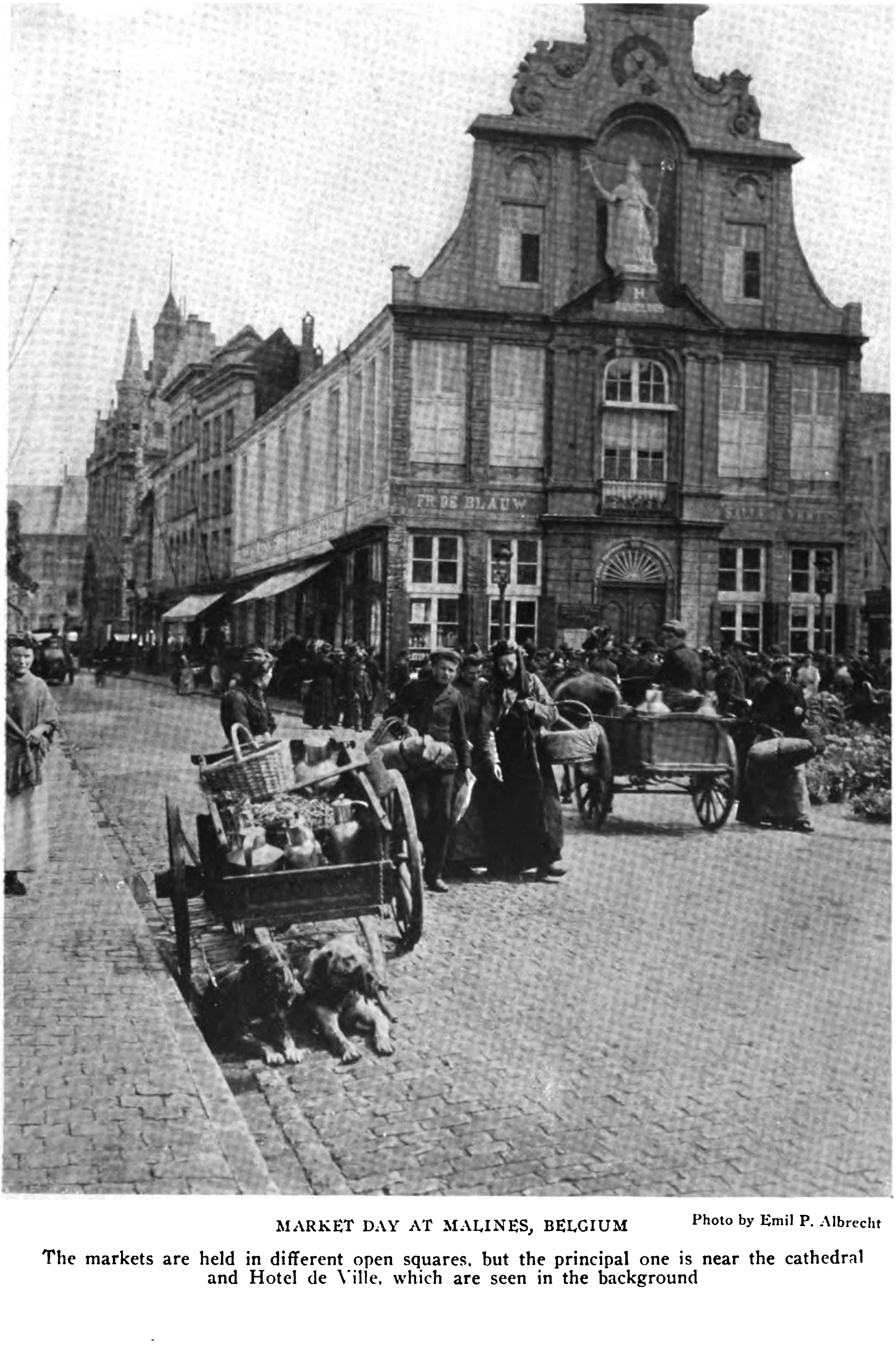


Photo by Emil P. Albrecht

THE CATHEDRAL OF ST. ROMBOLD, AT MALINES, BELGIUM

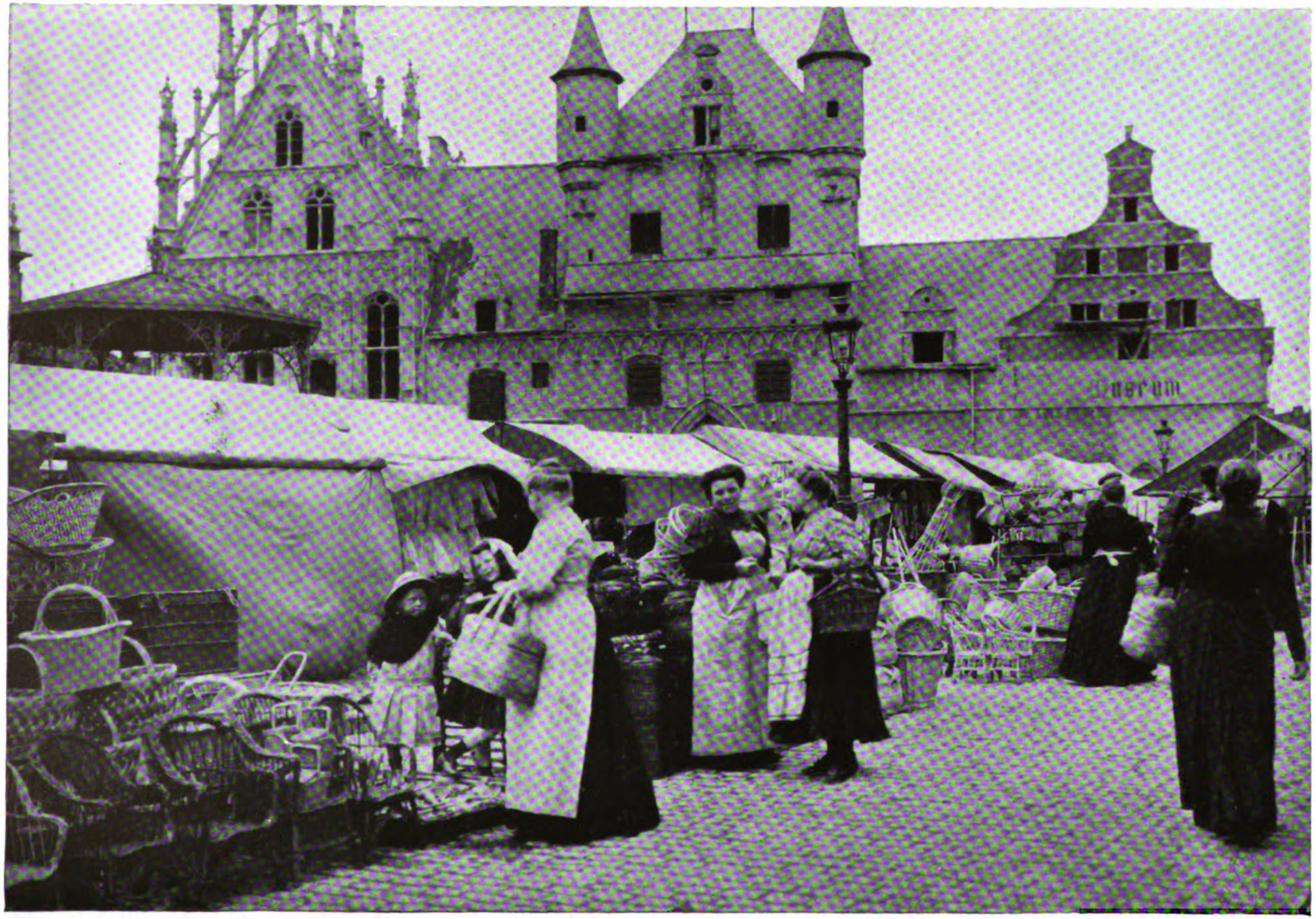
It was built from the thirteenth to the fifteenth centuries and is one of the stateliest in Belgium, and rich in pictures. The tower was to have been "the tallest in Christendom," but was never completed. Its present height is 324 feet. The skeleton faces of the clock which adorn the tower on its four sides are 43 feet in diameter. Malines is a city of about 70,000 population, situated on the Dyle River about midway between Antwerp and Brussels. It is in a sense the religious capital of Belgium, the archbishop residing there and being the primate of the Catholic church in that country. It gave the name Mechlin to a famous lace. The town is a very quiet one in spite of the fact that it is one of Belgium's most important railroad centers. The cathedral was almost entirely erected with money contributed by pilgrims who flocked there to obtain indulgences issued by Pope Nicholas V. During the present war it has been the center of much fighting.



MARKET DAY AT MALINES, BELGIUM

Photo by Emil P. Albrecht

The markets are held in different open squares, but the principal one is near the cathedral and Hotel de Ville, which are seen in the background



A CORNER IN THE MARKET-PLACE AT MALINES, BELGIUM

Photo by Emil P. Albrecht

The old Cloth Hall (rebuilt in 1320) is in the background. In this section every kind of wicker or basket ware was to be had, beautifully made and very reasonable in price with never a fratricidal war in their modern history. That tie is the bond of religion, for they all subscribe to the doctrines of the Church of Rome with a heartiness that makes them one of the best-loved peoples of the Holy See.

These two peoples were first united under Philip the Good of Burgundy, and while they had to pass through the vicissitudes of many a war of European politics before they got even within hailing distance of the time when they, fighting shoulder to shoulder, could start their career of separate existence from other countries and united existence among themselves, they were always on the same side when other countries fought for their control.

Their tongues are Flemish and French, and only 10 per cent of the people can speak both. The Flemish influence never crossed the Meuse River toward the east, and the Walloon influence reached but a short distance toward the west from that beautiful valley. The line of demarcation between the two peoples is rather sharply marked.

The Walloons occupy eastern Belgium. Their name is said to come from the German word "welch," meaning culture. It was given by the tribes of the Rhine region to the inhabitants of the Valley of the Meuse because of their early civilization, for they were one of the first of the peoples of western Europe to step across the twilight zone between semi-barbarism and civilization.

WALLOONS AND FLEMINGS

There is a physical difference between the Walloons of eastern Belgium and the Flemings of western Belgium, just as there is a difference of tongue and stock. The Walloons are of stouter build and greater stature, and are dark where the Flemings are fair, thus bespeaking the commingling of Spanish blood. On the other hand the Flemings are the more industrious of the two peoples, and their women are said to be able to prepare the best meals out of the fewest things of almost any race in the world. Both the Flemings and the Walloons are fond of bright and lively colors, but it is the opinion of most observers that the Walloons have the quieter tastes. The women on both sides of the Meuse are famed for their industry, thrift, cleanliness, capacity for hard work, and cheerfulness whatever their lot.

THE BELGIAN CONSTITUTION

Belgium is governed under a constitution dating from 1830. This instrument was framed by a convention of Belgians, and has continued in force with but few modifications ever since. It stipulates that there shall be freedom of conscience, of education, and of press, and guarantees the right of meeting. Also, it provides that the ruler shall be a member of the Church of Rome.

Succession rests with the male heirs of the King. Should there ever be a complete default, the King can, with the consent of the two branches of the Assembly, nominate his successor. If there be no such nomination in the event of default, then a new Assembly shall be elected, two members for each one member in normal times, and that body thus constituted is directed to proceed to make a choice of a new King.

Belgium's constitution describes the government as a hereditary constitutional monarchy. But as the King has the right of initiating proposals for new laws and the power to dissolve the Assembly at will, the powers possessed by him are greater than those enjoyed by most constitutional rulers.

The Assembly is made up of a Senate and a House of Representatives. The Senate consists of 76 elected members and 26 members appointed by the provincial councils. The members of the King's Cabinet may be members of either branch of the Assembly, but whether they are or not, they enjoy the privilege of speaking in both.

SENATORS AND REPRESENTATIVES

A senator sits for eight years, unless the Assembly is dissolved during his term, when all seats become vacant and a new Assembly is elected. No man is eligible until he is 40 years old, which is a higher qualification in point of age than is required in our own Senate.

LIVE CHICKENS: MALINES, BELGIUM Photo by Emil P. Albrecht

In no other country is the dog team so much used as in Belgium. Three and four dogs abreast are frequently seen, and they draw quite heavy loads

Half of the Senate is elected every four years.

In the United States we pay our senators well, and by law forbid them to ride upon free passes. In Belgium a senator serves without other pay than a railroad pass. But as the railroads there are State-owned and State-controlled, nobody thinks of objecting to a senator thus accepting free transportation, especially since that is an inexpensive way of paying legislative salaries.

The House of Representatives consists of 166 members elected for four years, half of them every two years, while our representatives are elected for two years—the whole House at once. A Belgian representative must be 25 years old, and, unlike the senators, he is a paid official, getting $800 a year and a railroad pass into the bargain for his services.

Prior to 1894 a very small part of the people were vested with the right of suffrage, as may be inferred from the statement that out of 6,500,000 people only 137,772 votes were cast. In that year the people demanded an extension of the suffrage, and they got it.

THE SUFFRAGE LAWS

Under the new law then enacted every male citizen who has reached the age of 25 is entitled to a vote. When he reaches 35, if he is a married man or a widower with legitimate children, and pays a direct tax of $1 a year, he is entitled to a second vote. If a man has a certain amount of property, or if he holds a university diploma, he is entitled to two additional votes because of that fact, except that in no case shall he be entitled to cast more than three votes.

A man does not dare stay away from the polls in Belgium if he is entitled to a vote, unless he is willing to incur the penalty of the law, for failure to vote is a misdemeanor.

The election returns for 1910-11 show how the system of plural voting works. There was a total of 1,636,000 votes cast in that election, of which 933,000 were by men having one vote, 395,000 by men having two votes, and 308,000 by men having three votes.

On the whole, this system of plural voting has worked satisfactorily, tending to preserve a sort of relation be-

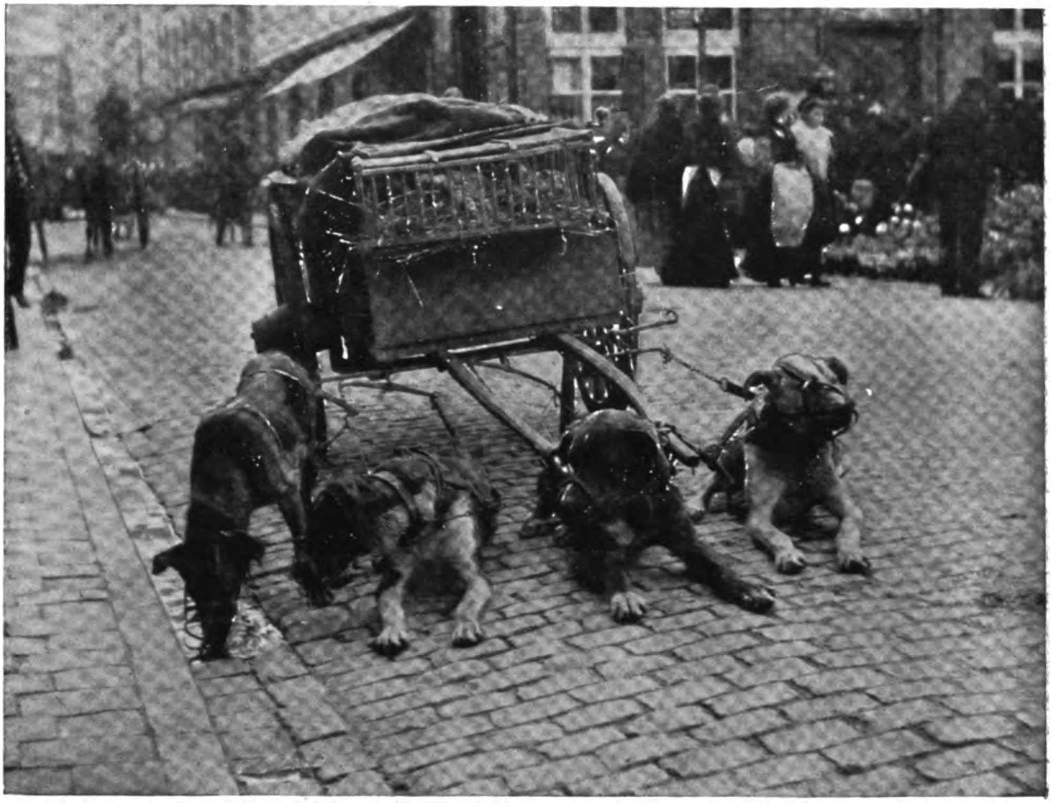


Photo by Emil P. Albrecht

THE DOGS ARE WELL CARED FOR BY THEIR OWNERS

Note how longingly the two dogs which cannot reach the water look at it. The methods of attaching the dogs to the cart are peculiar—one in the shafts, the other "hitched" on at various points.

tween the influence of the individual in government matters and his qualifications to exercise that influence. However, it has not satisfied the Socialist element in the Belgium electorate, which demands "one man, one vote."

PROPORTIONAL REPRESENTATION

In addition to having plural voting, the Belgians also have plural representation. Here, for instance, is a district entitled to eight representatives in the House. Under our system, if there were four parties in the race, the eight candidates getting a plurality of the vote would be elected. But under the Belgian system parties rather than persons are voted for, and each party gets representation in proportion to the number of votes cast in the district. To illustrate this a case in point might be mentioned. The district in question casts 32,000 votes, divided between the candidates of four parties. The result of the vote shows 16,000 Catholic Conservatives, 9,000 Liberals, 4,500 Socialists, and 2,500 Catholic Democrats. The eight seats of the district, under this distribution, would go, four to the Catholic Conservatives, two to the Liberals, one to the Socialists, and one to the Catholic Democrats.

Belgium is divided into nine provinces, which correspond largely to our territories; 342 cantons, corresponding somewhat to our counties; and 2,623 communes, which are fairly comparable with our magisterial districts. The governors of the provinces are nominated by the King, just as the governors of our territories are nominated by the President.

CHEAP LIVING

Living is cheap in Belgium. The people have thoroughly mastered the art of

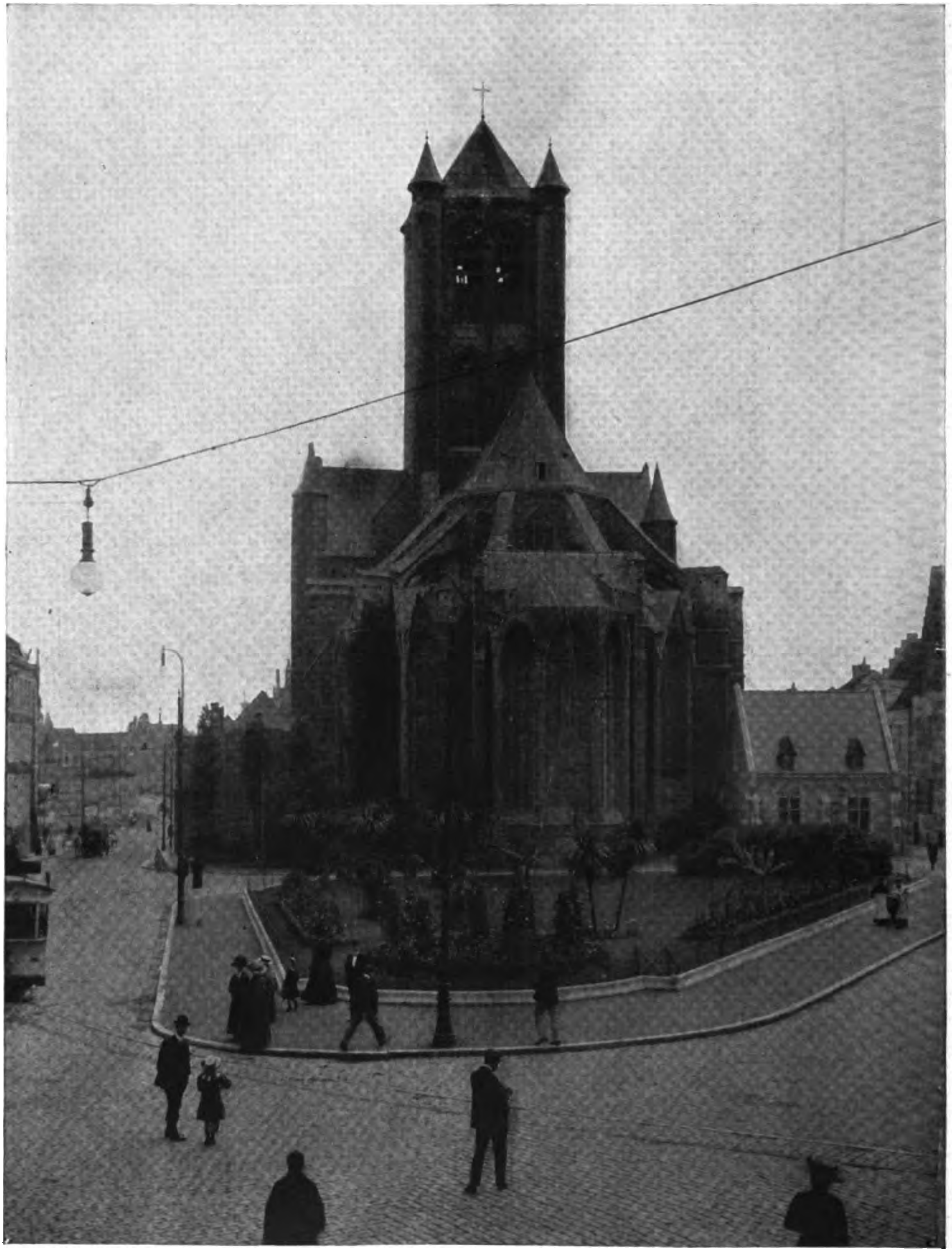


Photo by Emil P. Albrecht

THE CHURCH OF ST. NICHOLAS FROM THE EAST, ONE OF THE OLDEST BUILDINGS IN GHENT, FOUNDED IN THE ELEVENTH CENTURY AND REBUILT ABOUT THE BEGINNING OF THE THIRTEENTH

Ghent is the capital of East Flanders, at the confluence of the Scheldt and the Lys rivers. These rivers and a number of canals divide the city into numerous islands, which are connected by more than 200 bridges. The Belfry of Ghent is a tall structure in the heart of the city, in which are mounted 44 bells; one of them was pierced by an Austrian shell in 1789, but in spite of this its tone remains true. One of Ghent's most interesting institutions is the Grand Beguinage, or home of the Dutch Sisterhood of Sainte Elisabeth. It is a small city within itself, containing many small houses, 18 convents, and a church, and all surrounded with a wall and a moat. Ghent was the seat of the Count of Flanders. The churches and the public buildings are full of rare paintings. A great exposition was held there in 1913, in which most of the countries now at war participated. The population is approximately 175,000.

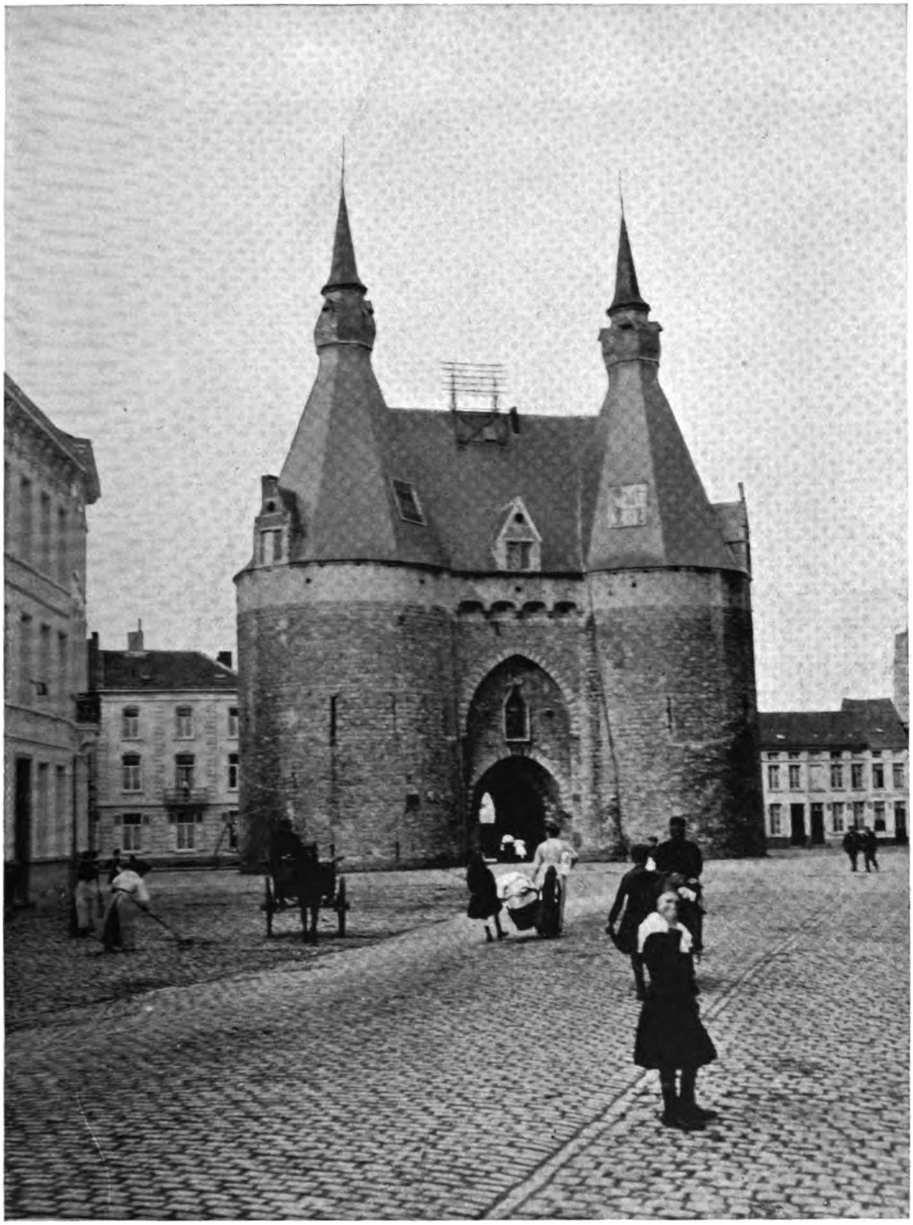


Photo by Emil P. Albrecht

THE PORTE DE BRUXELLES: MALINES, BELGIUM

It is the solitary relic of the twelve ancient city gates and was rebuilt in the seventeenth century. "No other land is richer in history or more affluent in art than is Belgium. In none have devout, industrious, patriotic, and gifted sons told their country's story more attractively. By pen and in print, on canvas, in mural decoration, in sculpture, in monuments of bronze and marble, in fireplaces, and in wood-carving, the story may be read as in an illuminated missal. Belfries, town-halls, churches, guild-houses, have each and all a charm of their own." From "Belgium, the Land of Art," by William Elliot Griffis.

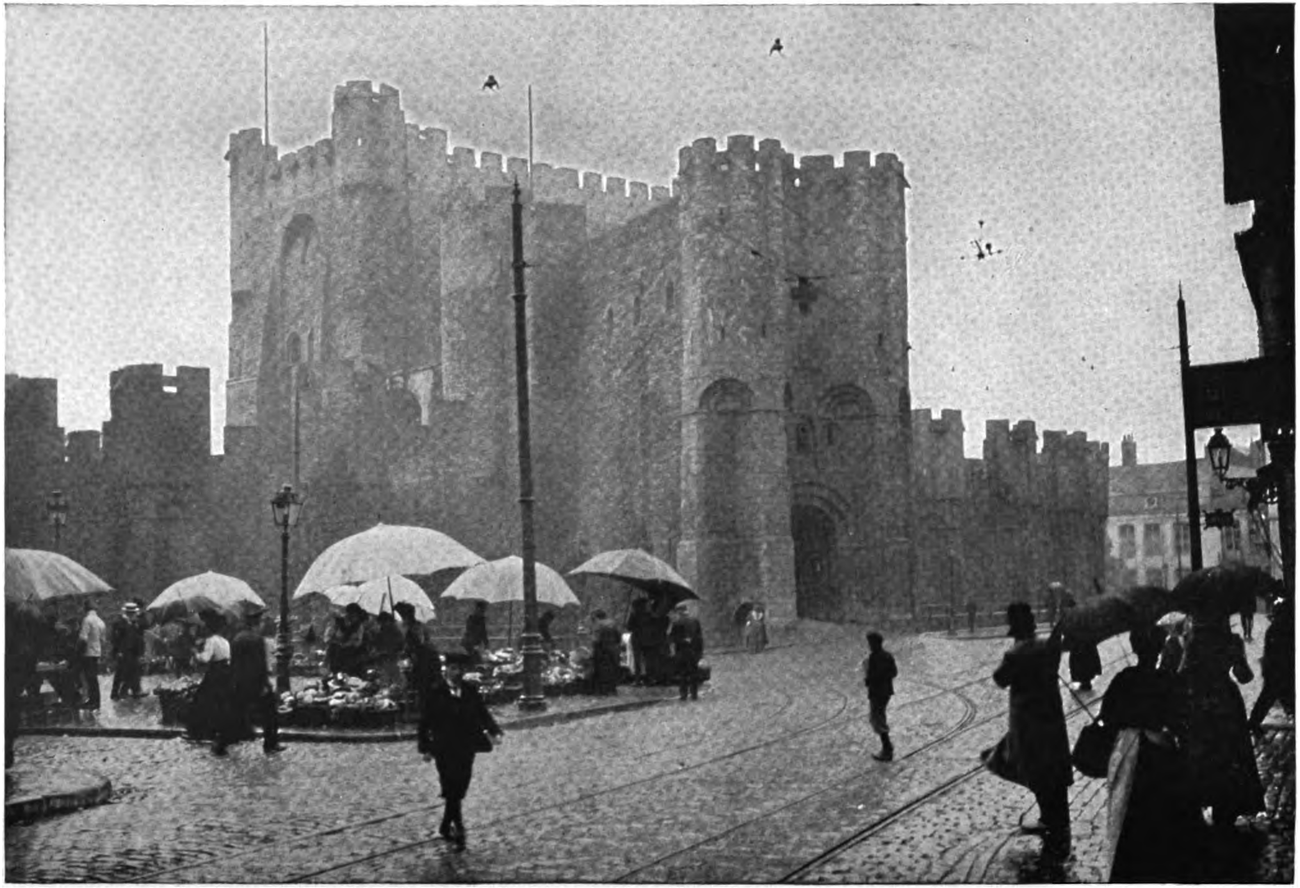


Photo by Emil P. Albrecht

ANCIENT CASTLE OF THE COUNT OF FLANDERS (IN POURING RAIN): GHENT, BELGIUM

Founded in the ninth century, rebuilt in 1180, and thereafter a residence of the Counts of Flanders. It gives a good idea of a medieval fortress. Here Edward III and his queen, Philippa, were sumptuously entertained, and their son, John of Gaunt (that is, Gand or Ghent), was born in 1340. In 1780 the castle was sold and converted into a factory, but it has since been laid open and restored. A subterranean passage 2½ miles long led to a point outside the city, and was used by the troops who defended the castle.

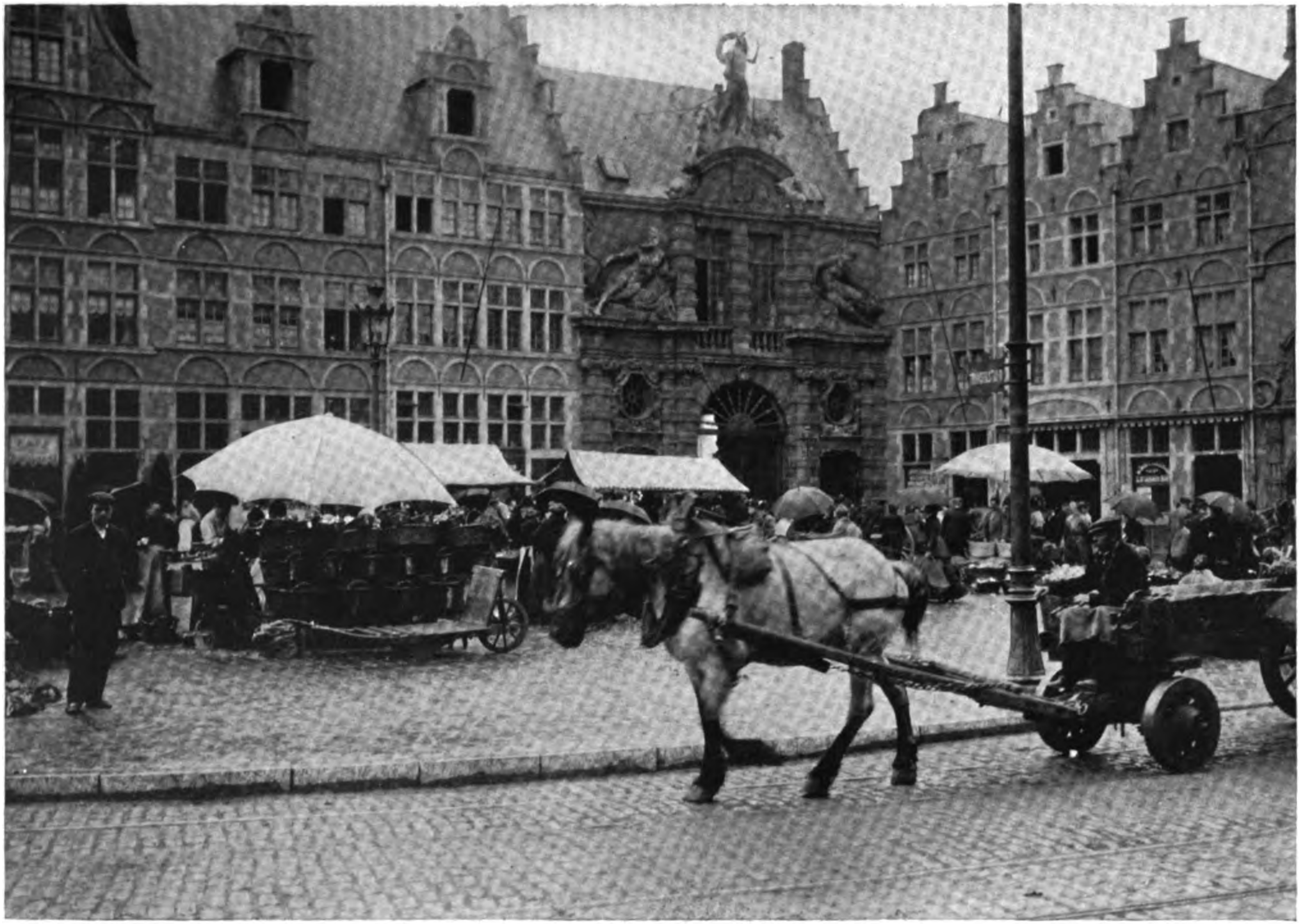


Photo by Emil P. Albrecht

SOME OF THE PICTURESQUE MEDIEVAL BUILDINGS OF GHENT, BELGIUM: THE GATEWAY IN THE CORNER, WITH SCULPTURES OF NEPTUNE, LEADS TO THE FISH MARKET AND THE RIVERS SCHELDT AND LYS intensive farming, and the land, before the present great war descended upon the country with its heel of iron, blossomed with the milk and honey of plenty. Being contiguous to the North Sea fishing grounds, it has always possessed a liberal supply of fish, which is a staple article of diet with the people.

How thoroughly the Belgians do their work is shown by their wheat yield. In 1913 they had a wheat crop covering approximately 400,000 acres, and the yield was over 15,000,000 bushels, or upward of 37 bushels to the acre. When we remember that our own yield is only 15 bushels to the acre, the fine agricultural development of Belgium will be apparent.

Again, Belgium grows 50 bushels of barley to the acre where we grow 24; 312 bushels of potatoes to the acre where we grow 90; and her other crops are in proportion.

LOW WAGES

If living is cheap in Belgium, it is no cheaper than conditions call for, because wages certainly are low. Many lace-makers, making the exquisite laces that bear the Belgian mark, work from the rising to the setting of the sun for five dollars a week. It is said that the average wage of all the breadwinners of the country approximates only $165 a year. The children work after they are 12, and all hands in a workingman's family must keep busy in order that no mouth shall go hungry. Even at this it requires the utmost frugality to make the buckle of income meet the tongue of outgo. So must the Belgian housewife be an excellent manager. The Belgian wage-earning classes eat but little animal food, and most of that is fish.

The day begins early for everybody in Belgium, and particularly with the wage-earners. More than half of Belgium's population lives outside the towns, and they are up and at their work before the gray dawn is dispersed by the rising sun, and on clear mornings the lights of hundreds of cottages may be seen vying with the stars as they twinkle forth their message of households bestirring.

EARLY TO RISE

In the towns and cities the people are downtown almost as early as their neighbors across the English Channel are at breakfast. They get their midday meal around noon, and they go home for it, since remarkably low tramway fares make this possible. So it is that, instead of a mug of milk and a sandwich at some quick lunch, many a Belgian burgher shuts up shop at 12, goes home to his largest meal of the day, eats it leisurely, and returns downtown by two.

The Belgian government has always felt a keen interest in the welfare of the wage-earner and the man of small affairs, and has made it possible for them to buy homes on easy terms. The national savings bank is empowered to make loans to householders for buying or building homes, and to insure their lives, so that in the event of death the family will not lose its equity in the place, and can use the insurance to wipe off the debt.

Taxes are made exceedingly low on small property owned by those who tenant it. In the country districts the effort of the small farmer is not to place a cottage where it is prettily located, but rather to erect it where it will not take up a single square foot of his workable ground, if that be possible.

A VAST MARKET GARDEN

The entire western portion of the country resembles one vast market garden. There are no fences marking the boundaries of the many small tracts, but rather little trenches that separate one farmer's place from the others. Tens of thousands of acres of the roughest kind of land have been converted into splendid trucking gardens by western Belgians. In 1839 there was a wild stretch of land west of the Scheldt River called the Pays de Waes, uncultivated and uninhabited. Today it is one of the most fertile sections of this remarkable country, supporting 500 people to the square mile, with truck farming as its principal industry.

As said before, the women of Belgium are noted for their homely virtues and their spirit of helping to keep the family

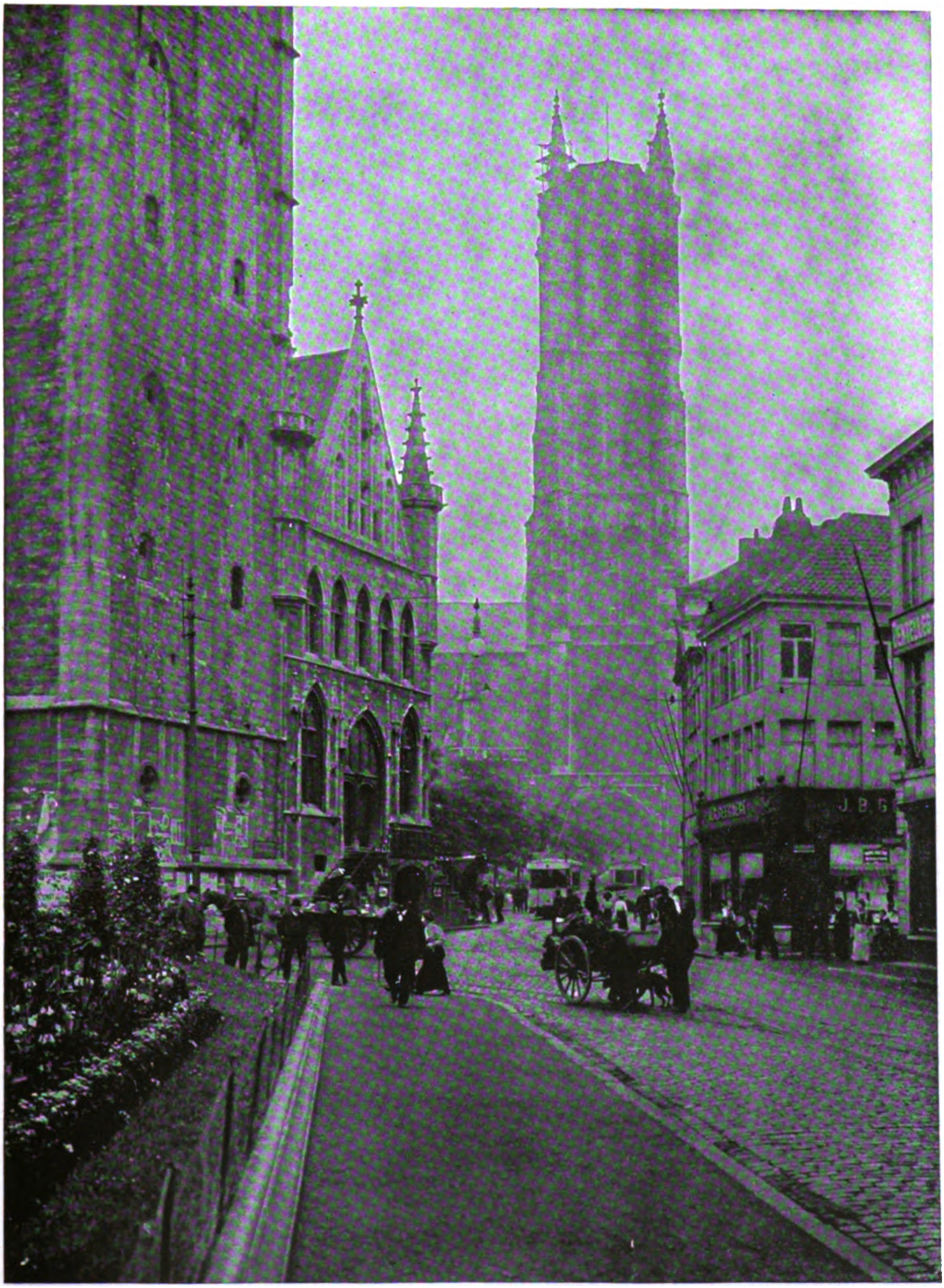


Photo by Emil P. Albrecht

THE CATHEDRAL OF ST. BAVON, ELEVENTH TO SIXTEENTH CENTURY: GHENT

The tower, 260 feet high, dates from 1462. Its spire was lost through fire in 1602. On the left is the Cloth Hall, a Gothic building of the fifteenth century restored in 1900, and on the extreme left is the base of the Belfry, built in 1300-1339, a tall, square tower 390 feet high, which, however, is only two-thirds of its projected height.

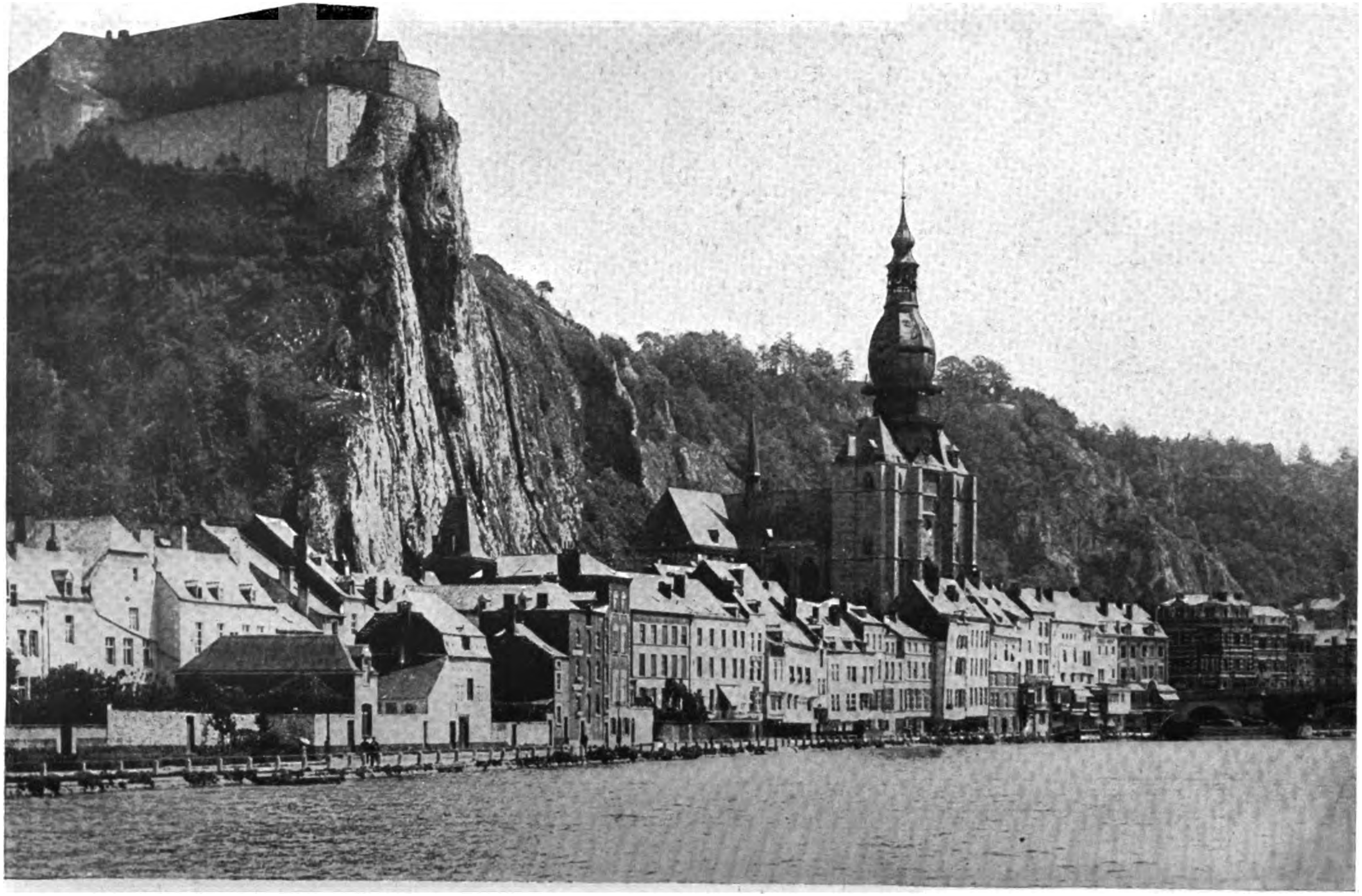


Photo and copyright by Underwood & Underwood

THE FORTRESS AND BRIDGE AT DINANT, BELGIUM: THE SCENE OF FEARFUL FIGHTING IN THE PRESENT WAR

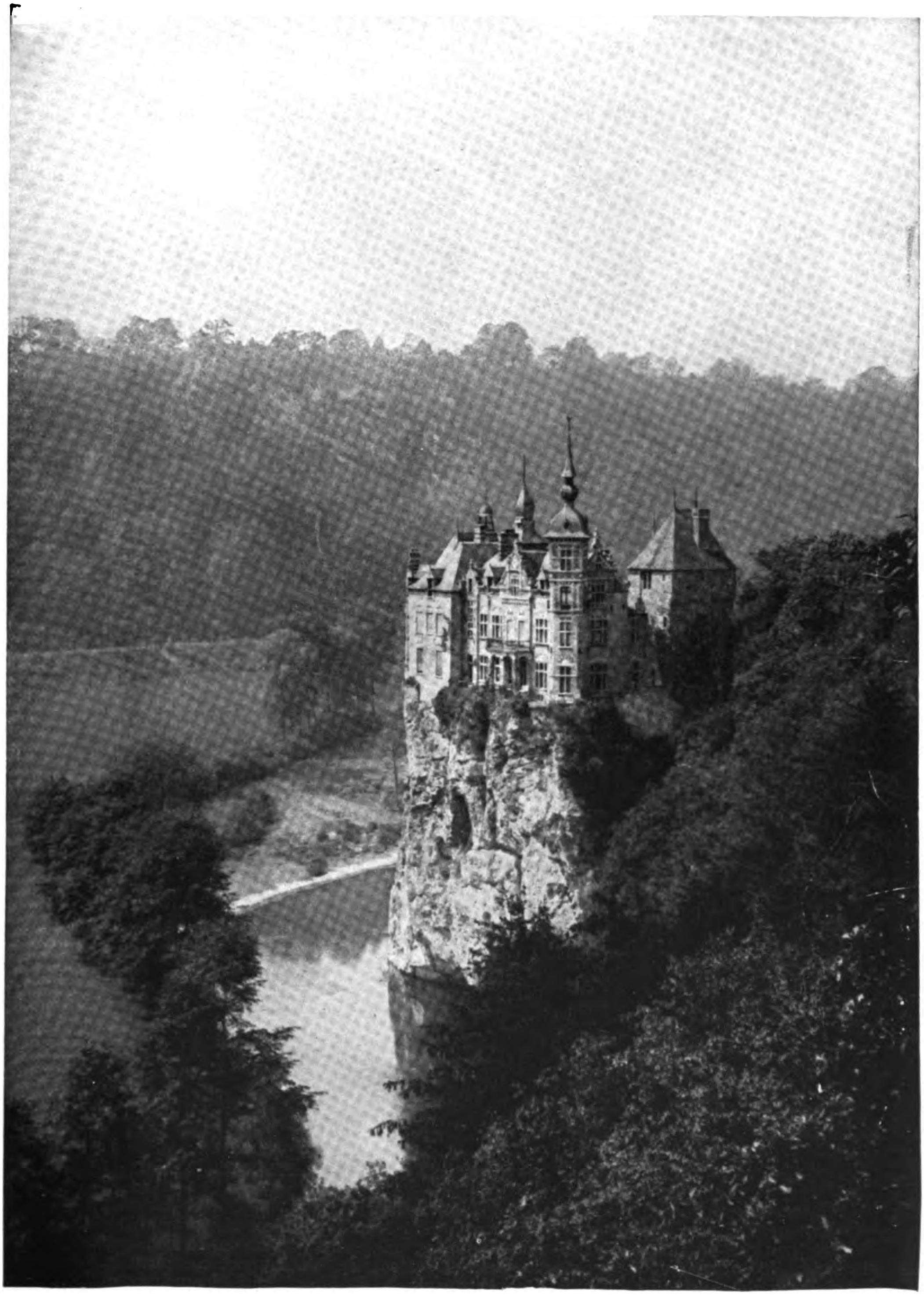
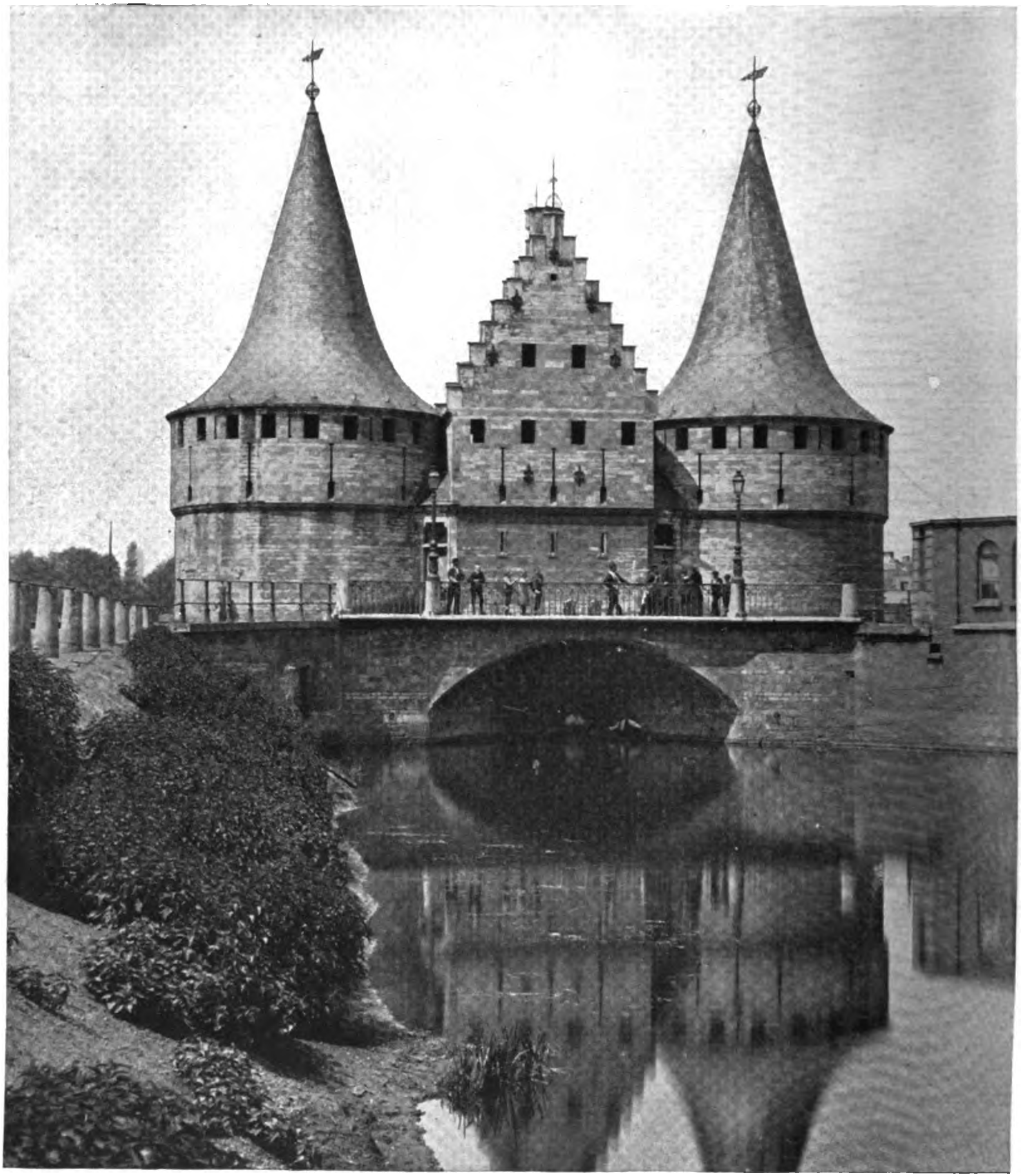


Photo and copyright by Underwood & Underwood

A CHATEAU PERCHED ON LOFTY CLIFFS BESIDE THE LESSE, NEAR DINANT

This beautiful and quiet valley has just been the scene of frightful carnage



A SMALL FORT, WITH TWO TOWERS GUARDING THE PASSAGE DU RABOT, GHENT

Ghent, during the thirteenth and fourteenth centuries, was the emporium of the trade of Germany and the low countries and was one of the wealthiest cities in all of Europe. It was then the center of a great cloth industry, and could put 20,000 armed citizens into the field. It is doubtful if any city in western Europe has had a more turbulent history, as it has been the center of repeated Roman, Frankish, Medieval, and Spanish campaigns in the low countries.

Photo by Emil P. Albrecht

ANOTHER PEACEFUL SCENE IN BELGIUM WHICH THE CRUELTY OF WAR HAS INVADED

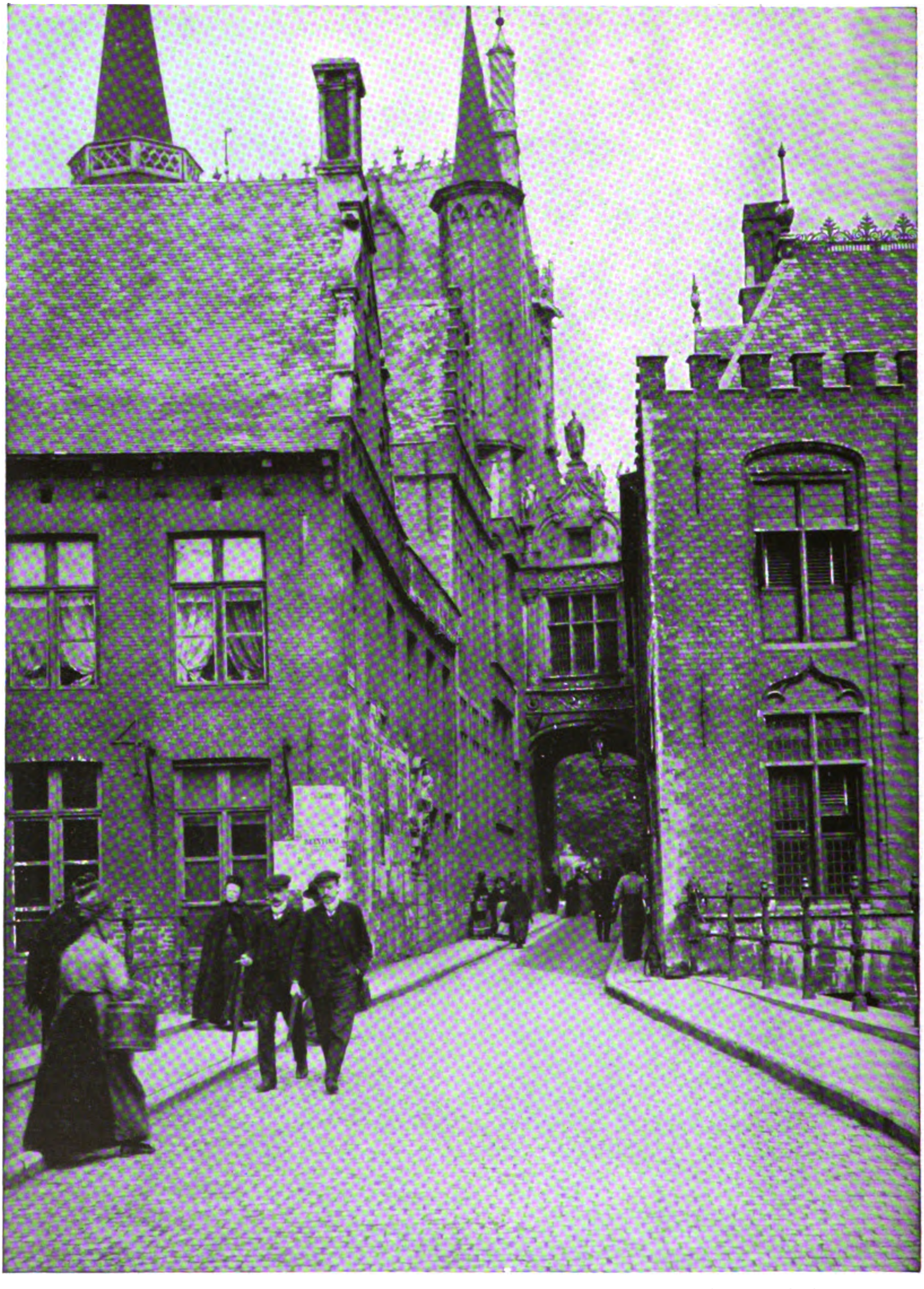
The canal near the Beguinage, Bruges, Belgium. A mother swan with eight cygnets, an unusually large brood, five being considered a goodly number

exchequer in a healthy state. They are women of early marriages and large families, as a rule; and yet, with all their household duties, they manage to find time to help the family operations out of doors.

AGAINST DOG LABOR

There are no milkmen in Belgium, for the women drive the dog carts that constitute the nation's milk-wagons. Their milk-cans must shine, the milk they deliver must measure up to carefully set standards of quality, and their dogs must be treated in a humane way. There are stated times for inspection, and the powers that be see that the cans are in proper order, and that the dogs have harness that fits them, bowls for their drinking water, and carpets or bags to lie down upon when they are tired.

It is a rather strange fact that, while there has never been a serious agitation in Belgium against child labor, there has been one against dog labor. It is con-



A TYPICAL STREET IN BRUGES, BELGIUM Photo by Emil P. Albrecht

Blinde Ezel Straat (Street of the Blind Donkey), between the Hotel de Ville (fourteenth century) and the Maison de l'Ancien Greffe Flamande, or old municipal record office, built in 1535, now used as law courts. The principal façades of the two buildings are on the Place du Bourg, a great tree-shaded square to be seen under the archway. Just why the name of the street, none knows, but a blind donkey could easily find its way through, as all there is to it shows in the picture.

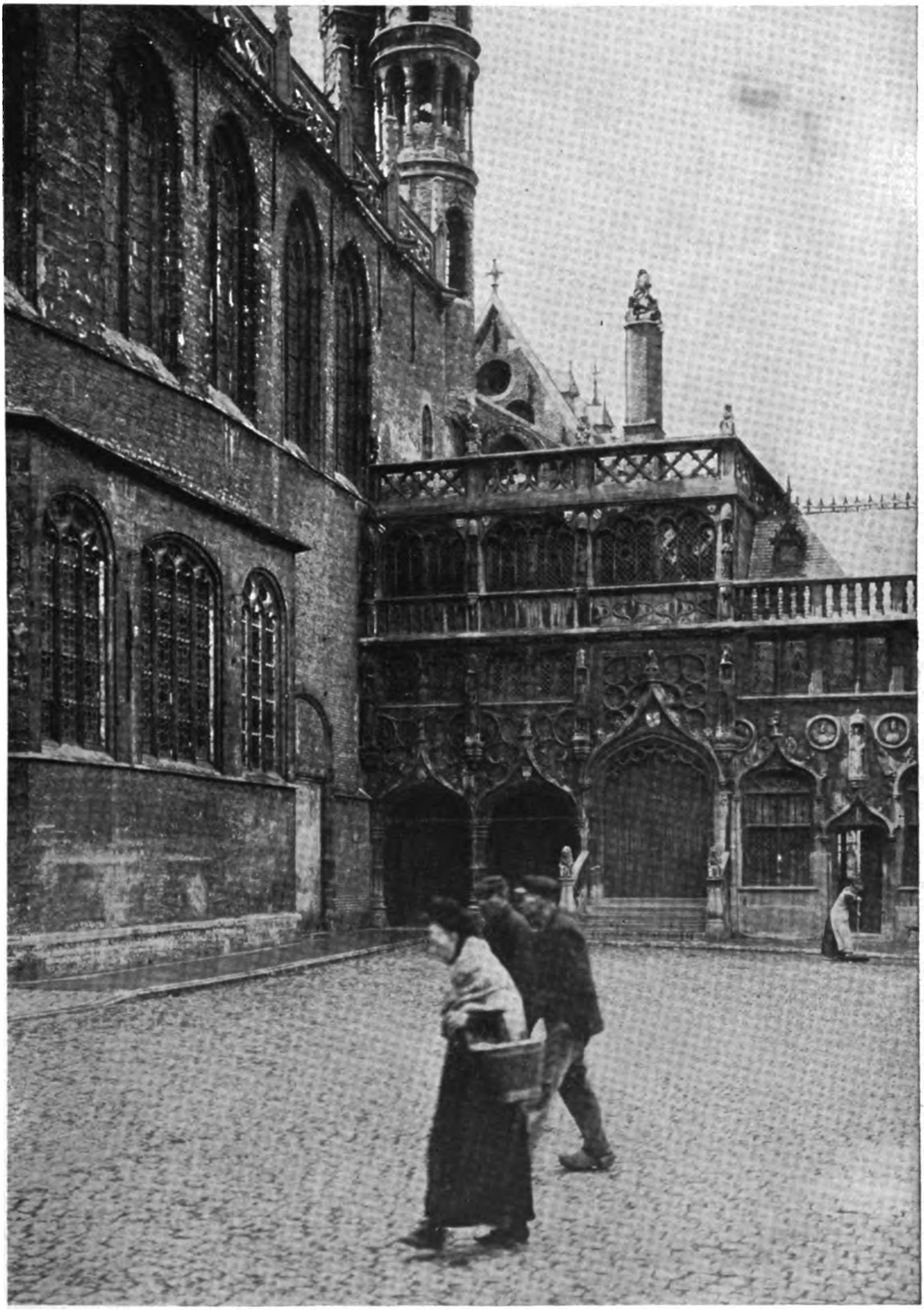


Photo by Emil P. Albrecht

THE CHAPELLE DU SAINT-SANG (CHAPEL OF THE HOLY BLOOD) IN THE CORNER OF THE PLACE DU BOURG: BRUGES

The lower story dates from 1150; the upper part was rebuilt in the fifteenth century. The portal and stairway, in rich flamboyant style, were constructed in 1533

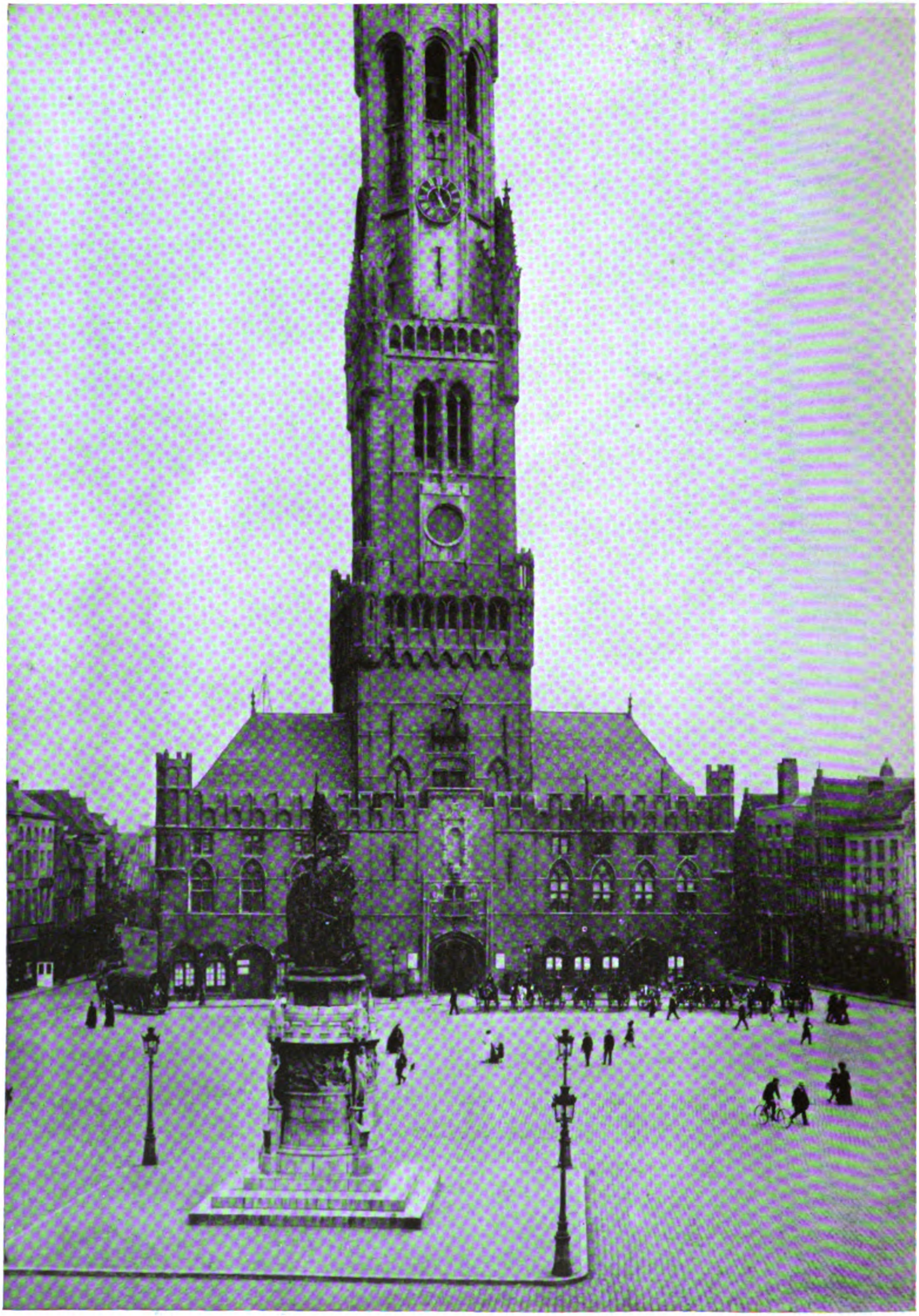


Photo by Emil P. Albrecht

LONGFELLOW'S CELEBRATED "BELFRY, OLD AND BROWN:" THE CLOTH HALL AND ITS BELFRY: BRUGES, BELGIUM

The hall dates from the thirteenth and fourteenth centuries. The Belfry (352 feet high) was rebuilt after a conflagration in 1280. The two lower stories are thirteenth and fourteenth century. The octagon above them was added in the end of the fifteenth century and the parapet about 1822.

tended that the dog is not fitted by nature for a draught animal, and that dog labor ought to be abolished. But with the masses a dog has no excuse for existence if he cannot contribute his share to the work of the family. The rich man may have his hunting dogs or his watch dogs, but in the economy of the working classes a dog that did not work would be such a heavy drain on the family food supply as to preclude keeping it. The Belgians cannot feed their dogs with scraps from their tables, for, like the boy who said, "There ain't goin' to be no core," there are no scraps left from the poor man's table in Belgium. That would be unspeakable extravagance.

If the Belgian women of the masses are hard-working helpmeets, they are at the same time fine examples of womanhood; for, though their clothes and ornaments are simple, the pictures of Flemish and Walloon women tell a tale of natural beauty.

The people of Belgium hold the world's record as beer-drinkers, and their steins of beer are their one extravagance. Their per capita consumption of beer is 48.8 gallons a year, while that of Germany is only 26.3 gallons. On the other hand, they are rather small users of wines and liquors, using only one gallon of wine per capita, where the Frenchman uses 34 and the Italian 18.5 gallons.

RAILWAY FARES

The railroad arrangements of Belgium have been most happy for the masses of the people. A double daily journey of 20 miles costs 37½ cents a week, a double daily journey of 44 miles 50 cents a week, and one of 66 miles 62½ cents a week.

Under this arrangement the area of the Liege labor market extends across the country nearly to Ostend. Out of 5,380 laborers who were commuters more than 1,000 traveled 30 miles or more to and from their work. The State railroads charge a penny for every non-traveler who goes into a railroad station, and the aggregate of these small levies affords a revenue of $50,000 a year. Belgium has a great many good public highways, their aggregate length being about 6,000 miles. Those west of the Meuse are generally paved, while those east of it are macadamized.

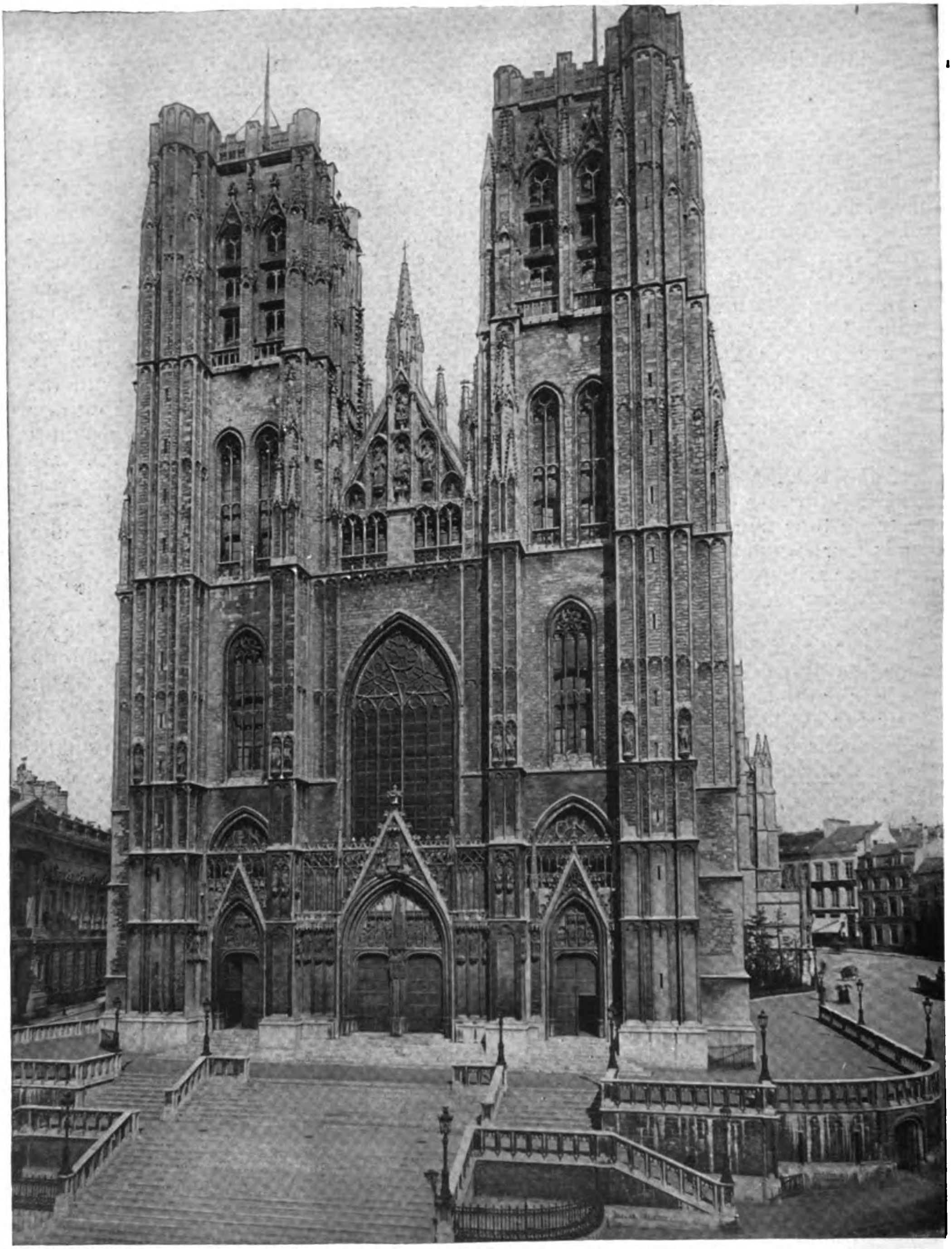
BELGIAN JUDICIARY

The Belgian people claim that they have the best code and the best organized judicial system in existence. The highest court in the land has but one justice, and he does not wait for cases to reach him through appeals from the decisions of the lower courts. He himself takes the initiative, examining every decision to see if it is in strict accord with the code. If he finds it is not, without any motion from any one he simply annuls the decision of the court below. He never sits in a case except when a member of the King's Cabinet is accused. He has a staff of law experts under him who aid him in his work. There are three courts of appeal and 26 courts of first instance.

Although 32 per cent of the people of Belgium are illiterate, education has been made compulsory and free to those who are unable to pay their way. There are about 8,000 primary schools, with an enrollment of nearly 900,000. Primary education stops at 12 for those who do not intend to pass through the middle schools. These latter schools are the recruiting ground for the teachers of the primary schools. All but about 50,000 out of 900,000 enrolled represent themselves as unable to pay for their education.

FEW EMIGRANTS

The Belgians, despite the crowded condition of their country, are not much given to emigration. The number who annually leave their home land for other countries in normal times reaches only about 14,000 a year. There are today about 50,000 native-born Belgians in the United States, with a total Belgian home population of 7,579,000, which figures become significant of the home-loving qualities of the Belgians when compared with the tendency to migration elsewhere. For instance, Ireland, with 4,400,000 people at home, has in the United States 1,352,000; Norway, with a population one-third that of Belgium,



THE CATHEDRAL: BRUSSELS

This edifice is situated on a somewhat abrupt slope overlooking the lower part of the city. It is an imposing structure of the Gothic type, begun in 1220. It consists of nave and aisles, with a retro-choir, and deep bays resembling chapels. In the north tower is the large bell of St. Salvator, weighing nearly seven tons.

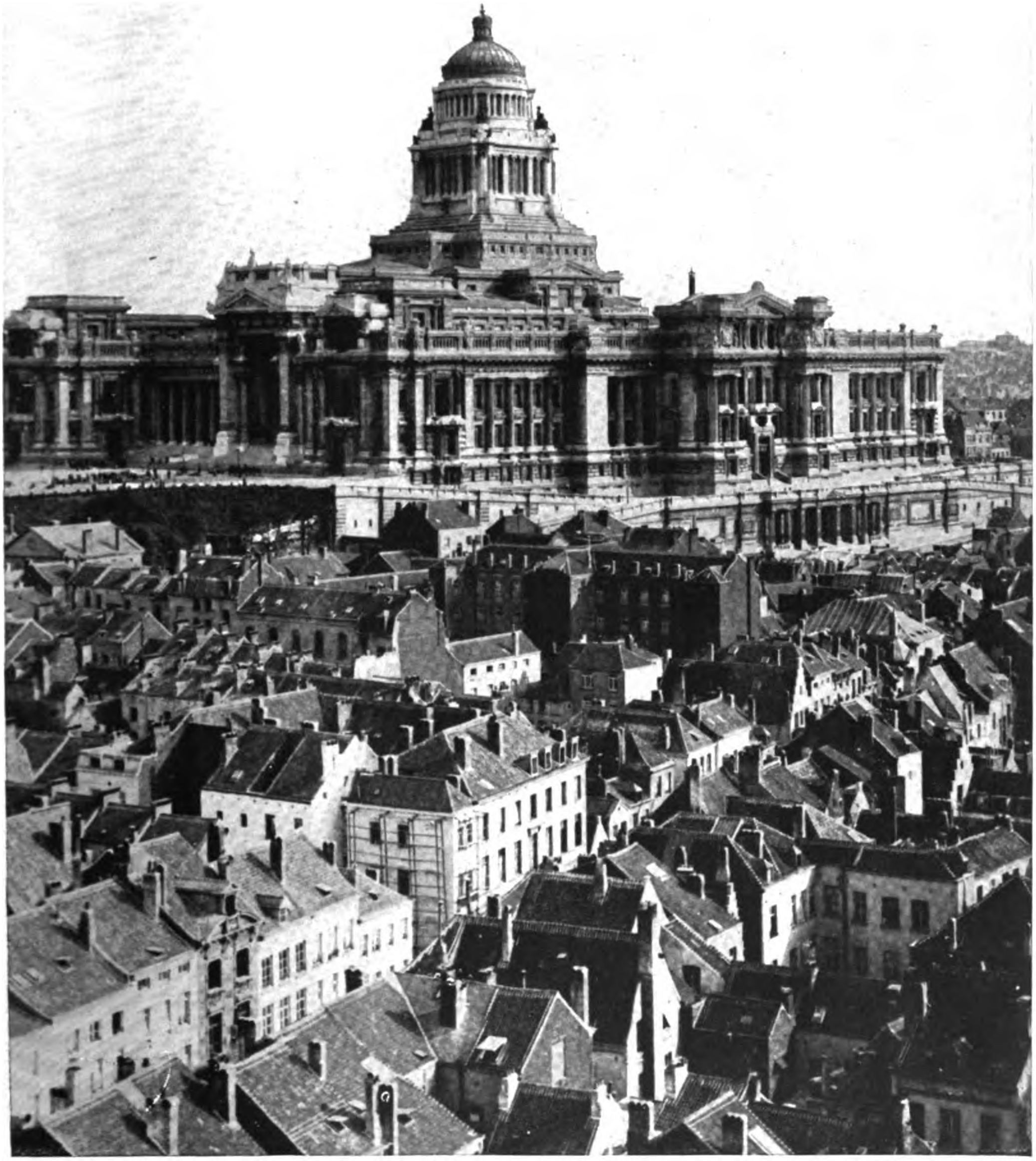
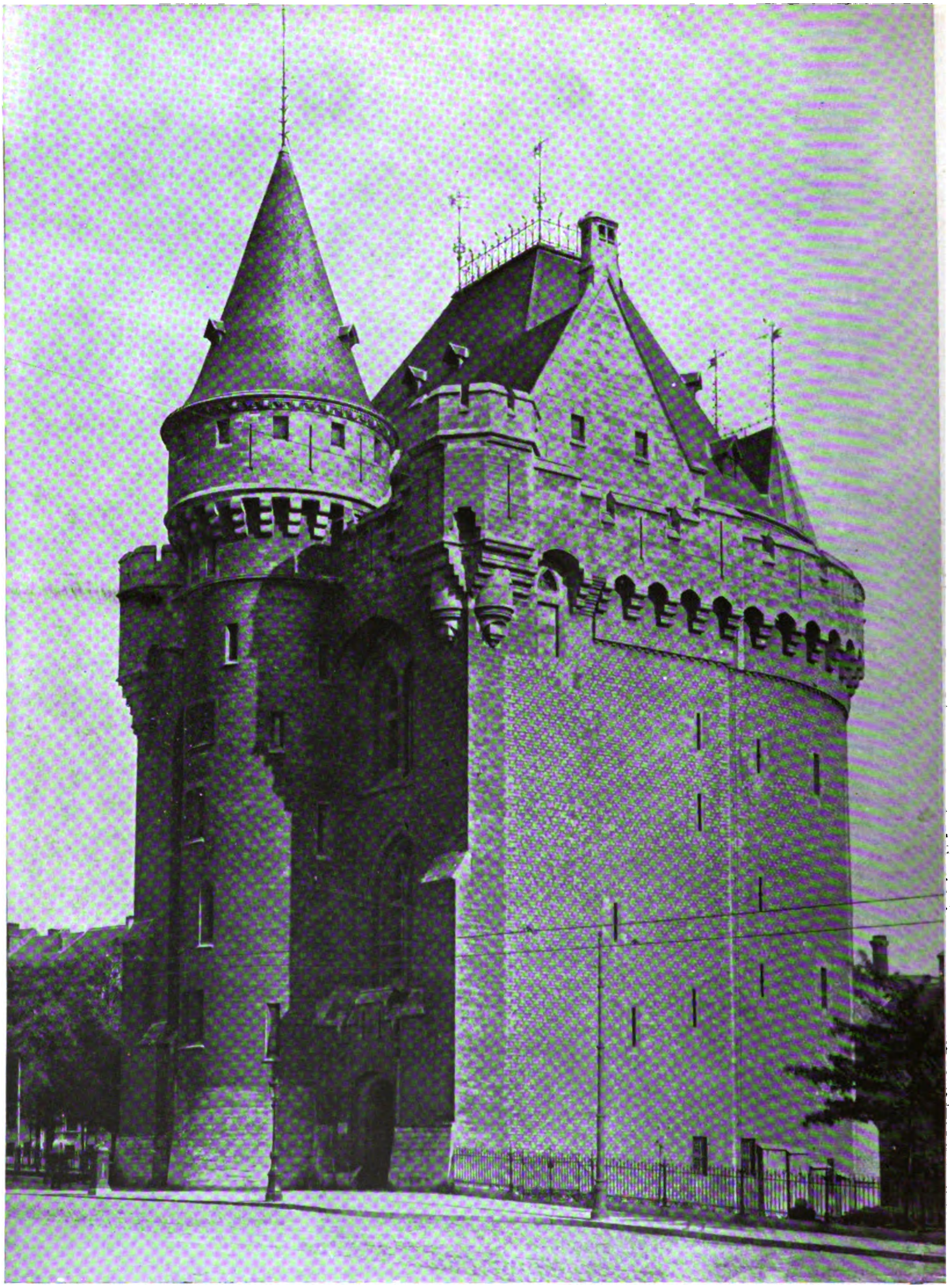


Photo and copyright by Underwood & Underwood

A VIEW OF THE CITY OF BRUSSELS: THE BUILDING WITH THE TOWER IS THE PALACE OF JUSTICE

Brussels, with its suburbs, has a population of about 700,000, and manufactures carpets, lace, bronzes, carriages, and leather goods on a large scale



HAL, PORTE DE BRUSSELS: THE SOLE REMAINING PART OF THE OLD FORTIFICATIONS OF BRUSSELS

It was erected in 1381, and two centuries later became the Bastille of Alva during the Belgian "reign of terror." It is a huge square structure, with three vaulted chambers, one above the other. It now contains a museum of weapons.

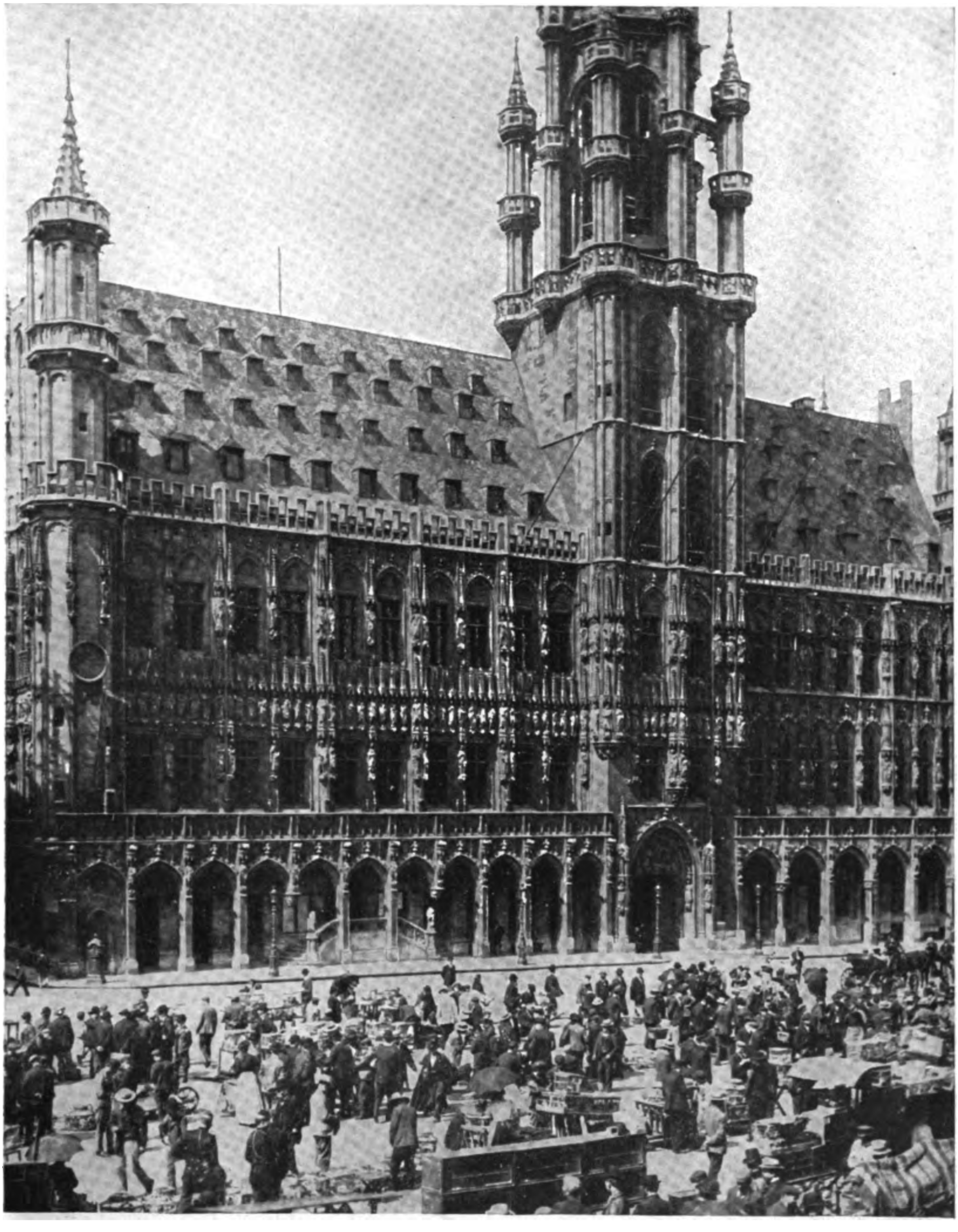
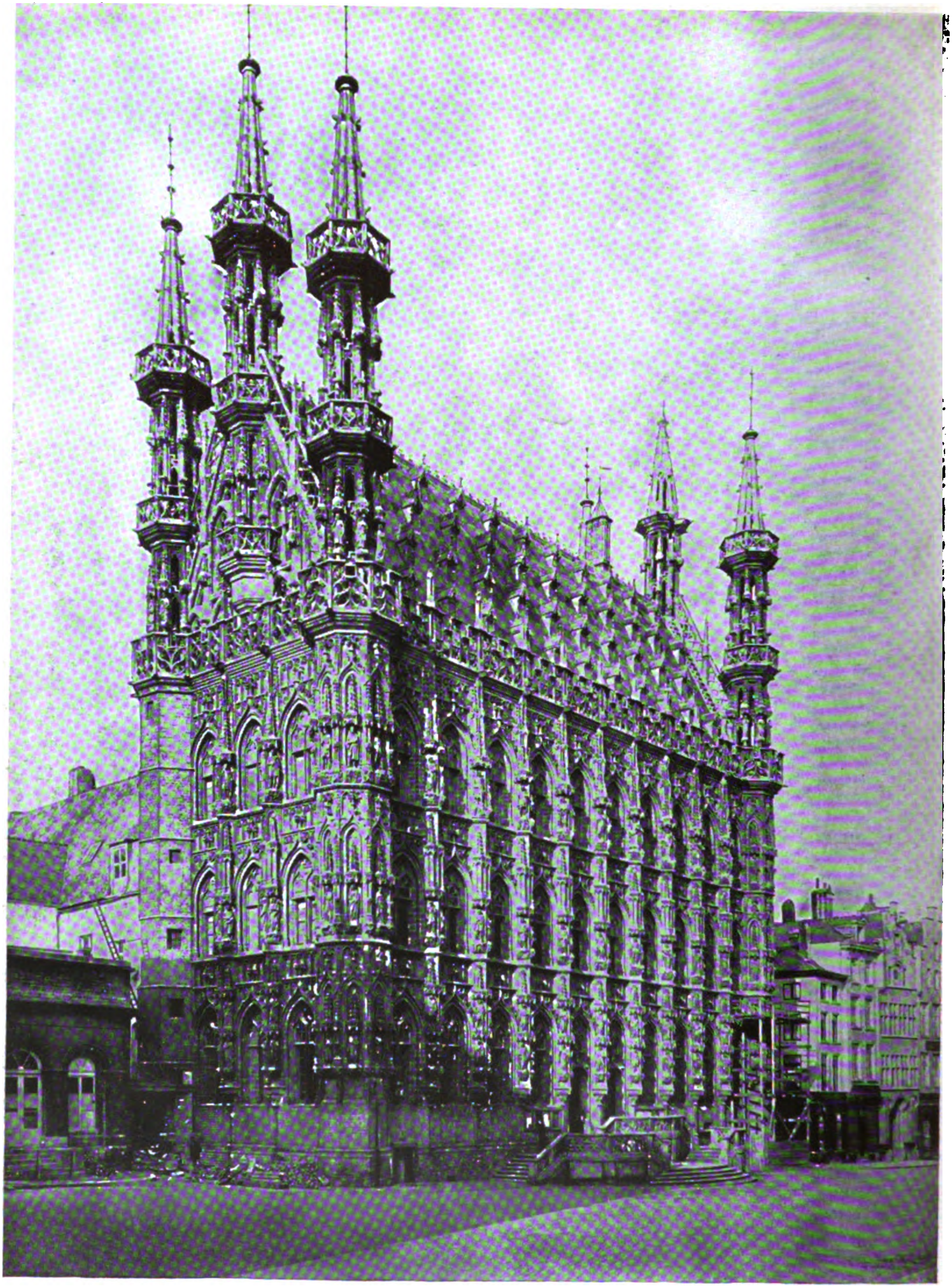


Photo and copyright by Underwood & Underwood

THE TOWN HALL AND MARKET-PLACE OF BRUSSELS, BELGIUM

Brussels is a city rich in art possessions. In the Royal Palace are specimens of Rubens and Van Dyck; in the cathedral is a pulpit representing the expulsion from Paradise, executed by the celebrated Verbruggen; in the Palais des Beaux-Arts are Hubert van Eyck's "Adam and Eve," Rubens' "Adoration of the Magi" and his "Portrait of the Virgin in a Bower of Roses," Van Dyck's "Drunken Silenus," Rubens' "Christ Hurling Thunderbolts at a Wicked World," etc. The art collections of Brussels, once inferior to those at Antwerp, are now equally representative.



HOTEL DE VILLE, OR TOWN HALL, OF LOUVAIN, BELGIUM

A very rich and beautiful example of late Gothic architecture, resembling, but surpassing in elegance and harmony of design, the town halls of Brussels, Ghent, and Bruges. It was erected in 1447-1463 by Matthew de Layens. The three façades are lavishly enriched with sculptures of persons prominent in the history of the city. Cable dispatches state that this wonderful building escaped unharmed in the recent destruction of the city of Louvain.

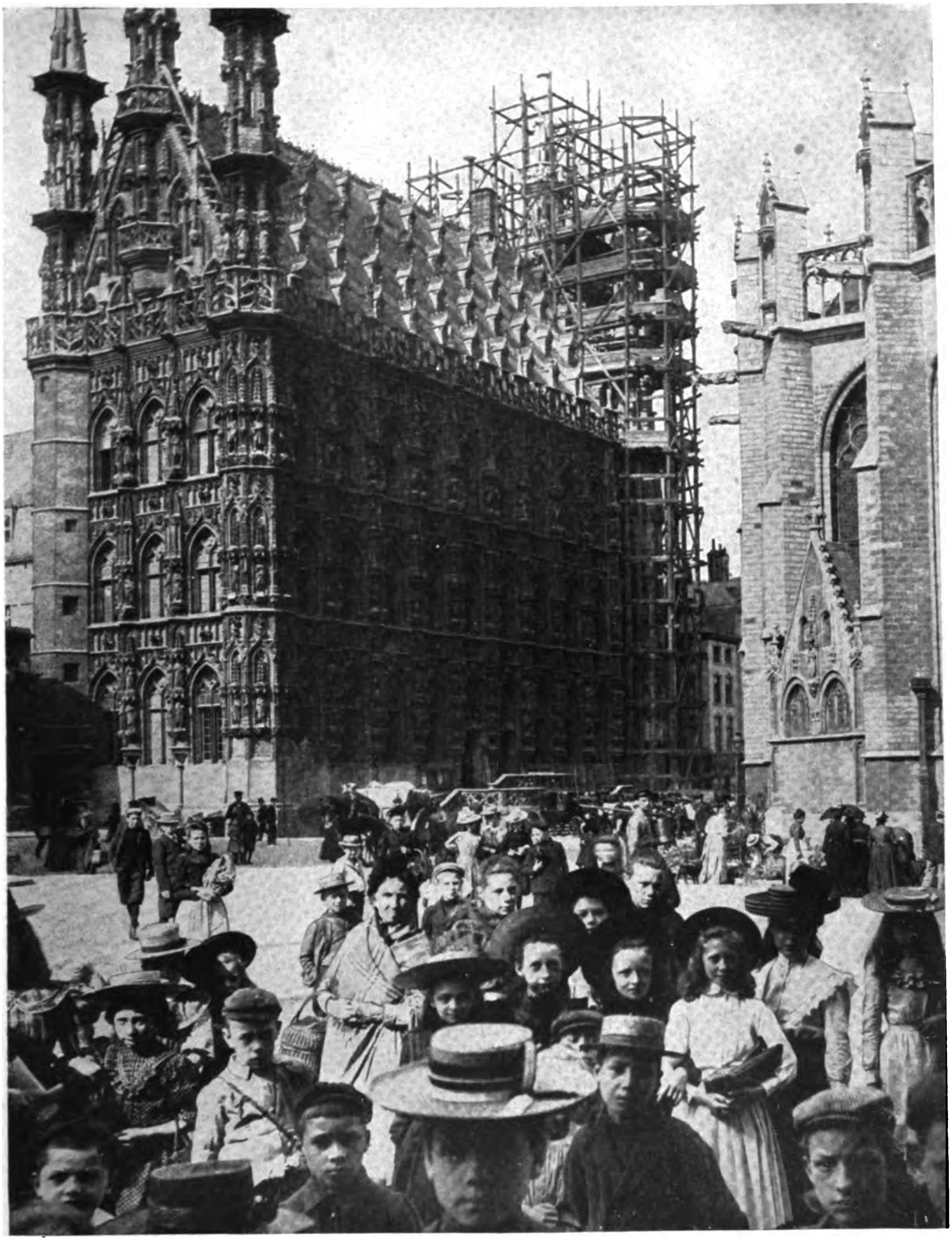


Photo and copyright by Underwood & Underwood

A STREET CROWD IN LOUVAIN, WITH THE HOTEL DE VILLE IN THE BACKGROUND

Louvain was a city of about 50,000 inhabitants, and in former times was the capital of Belgium. It lost its dominance following the insurrection of 1378 and its capture by Duke Wenceslaus four years later. A university was established in the hope of rejuvenating the place, but without success. Its theological school has been the pride of Belgium. The Gothic church of St. Pierre, next to the town hall, was Louvain's most important building. Of cruciform shape, the interior was 303 feet long, 90 feet broad, and 82 feet high. The principal art pieces were a copy of De Crayer's "Saint Carlo Borromeo," Geerts' statue of St. Charles, a carved and painted draped image of Christ, De Crayer's "Holy Trinity," and Dierick's "Last Supper."

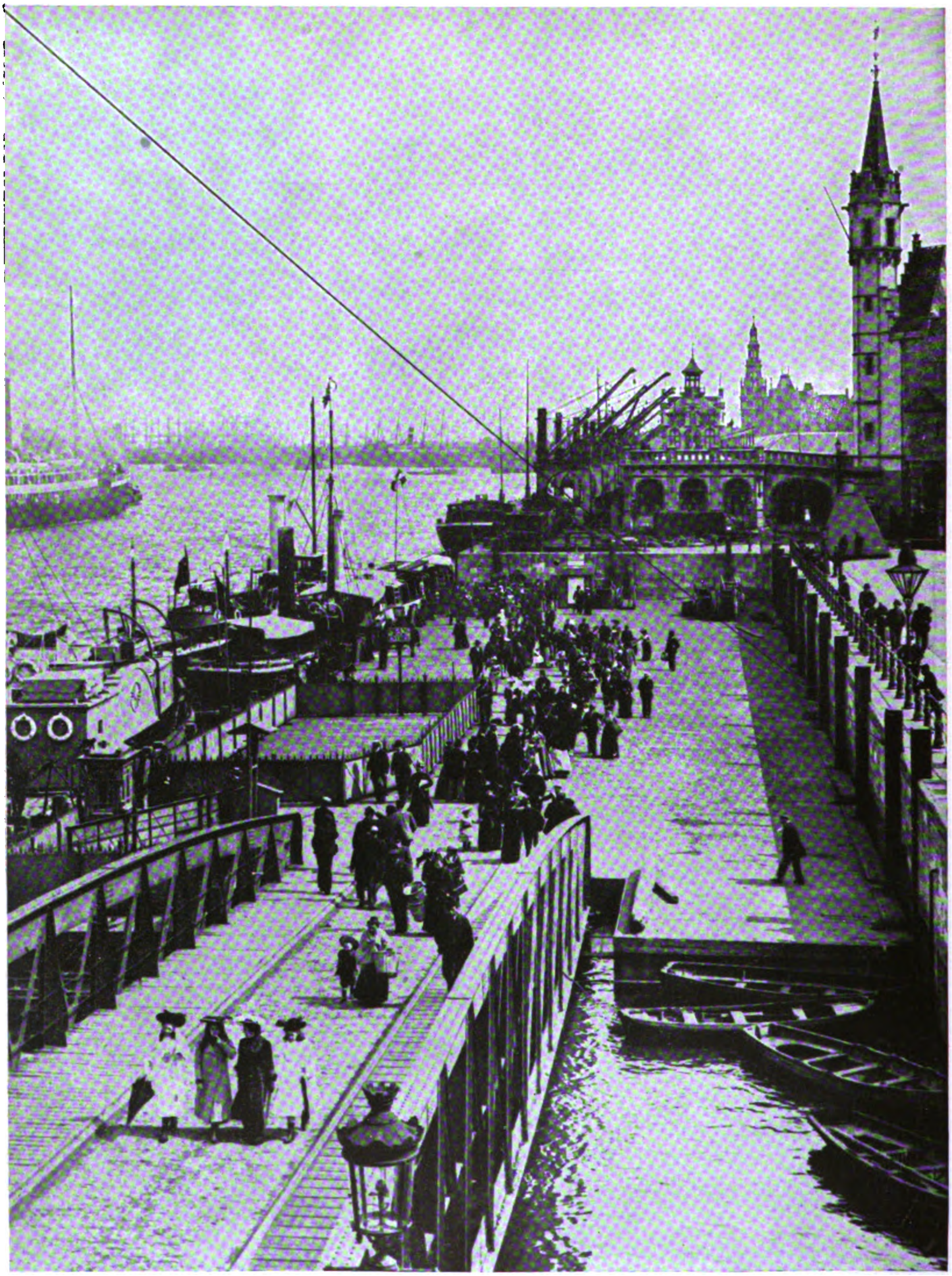


Photo and copyright by Underwood & Underwood

ANTWERP: THE TEMPORARY CAPITAL OF BELGIUM

View looking north along the River Scheldt, where shipping once made Antwerp Europe's richest commercial port. All of Antwerp's vast commerce must reach the sea through the Scheldt River, whose lower course and mouth lie in Holland. Under the treaty or 1839 all Antwerp shipping had to pay toll to Holland. In 1863 Belgium and the other interested nations agreed to commute this by paying a lump sum of $7,200,000 to the Dutch.

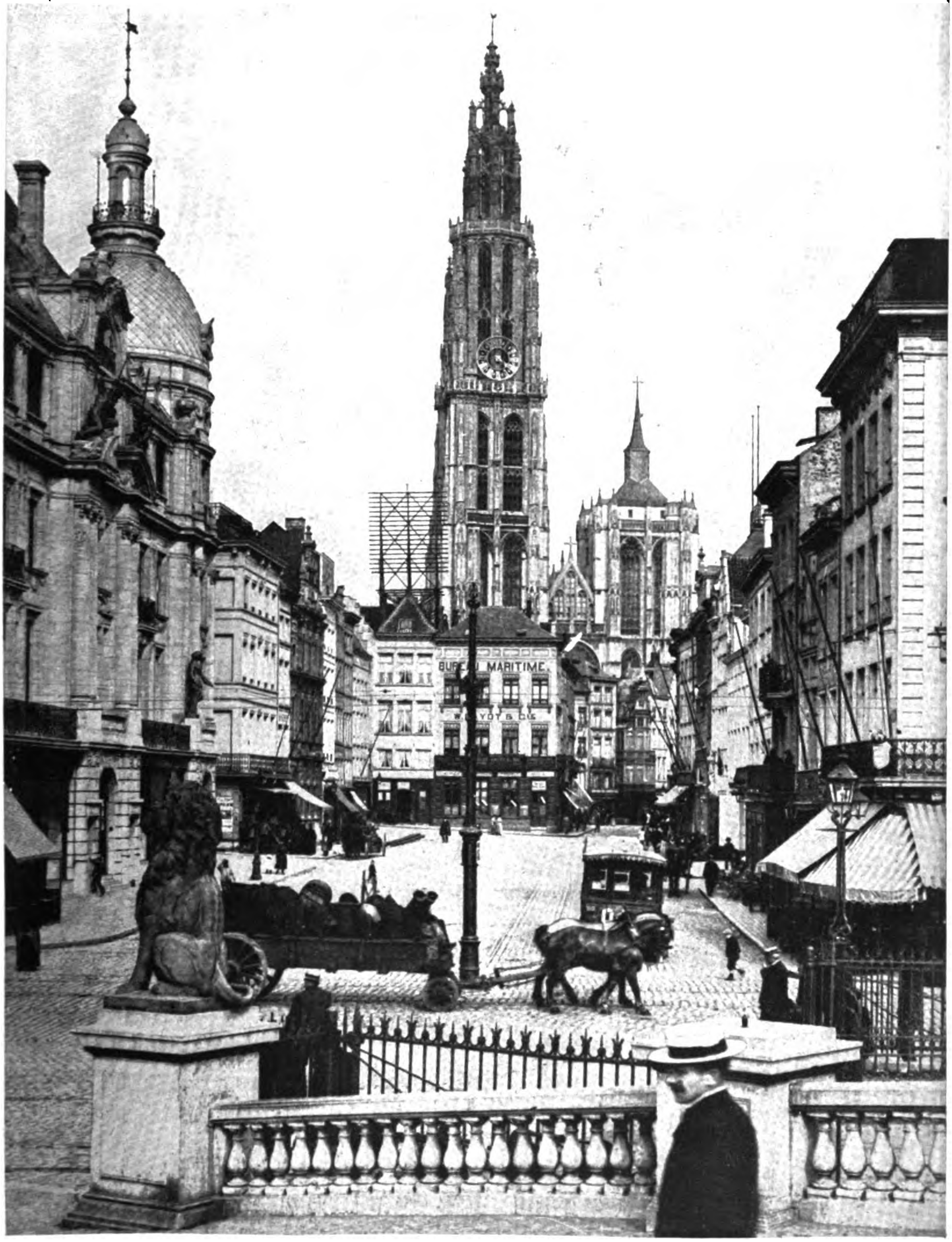
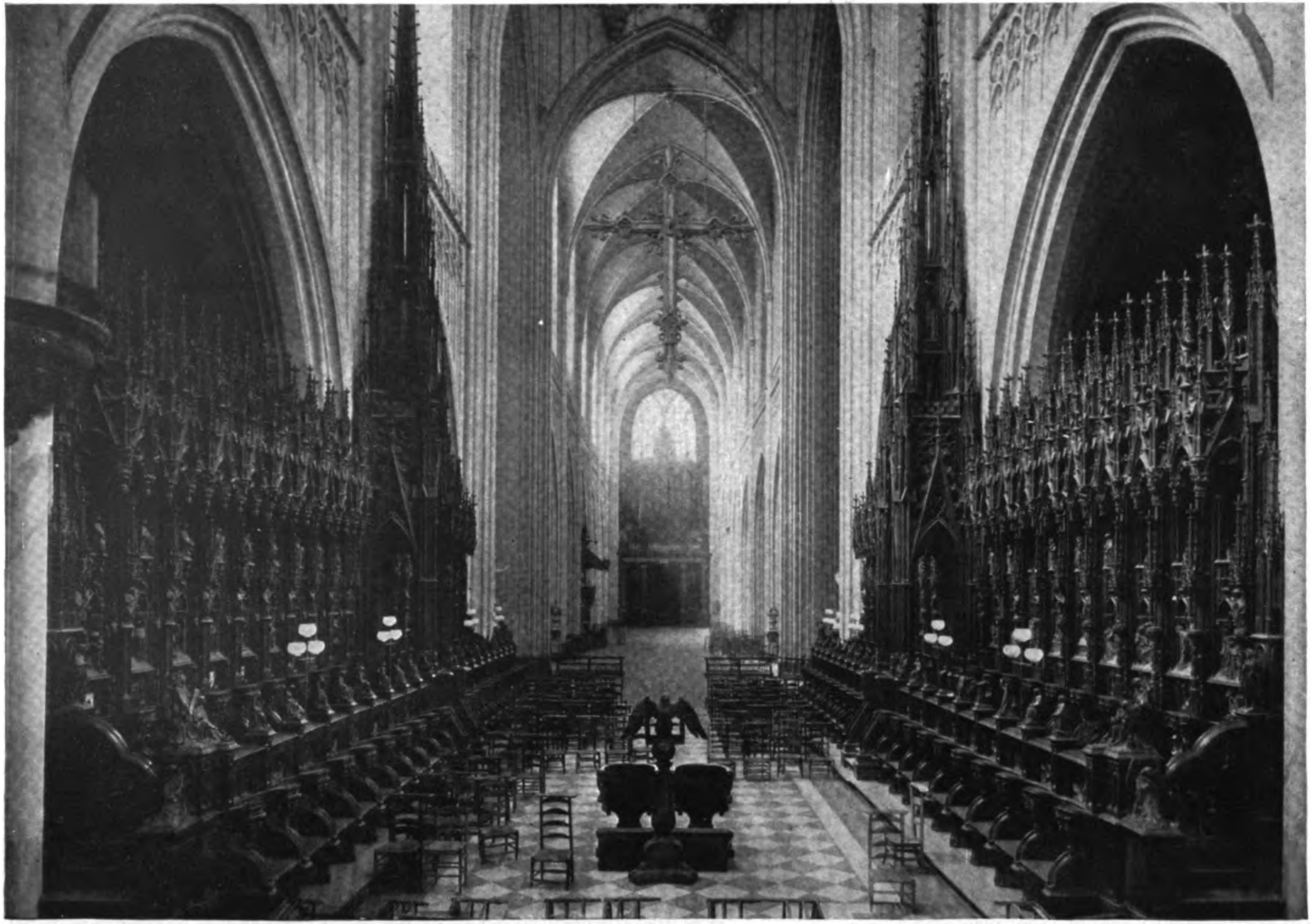


Photo and copyright by Underwood & Underwood

ANTWERP: THE TEMPORARY CAPITAL OF BELGIUM

View looking east from the Quay Van Dyck along the principal street of Antwerp. In the background is seen the cathedral. Since the Scheldt River was made free from Dutch toll levies, in 1863, no other port in Europe has enjoyed such a great ratio of increasing commerce as Antwerp. Before the war broke out it handled an export and import business aggregating perhaps twenty million tons a year. A vast deal of Germany's foreign trade passed through Antwerp.



IN THE CHOIR OF THE CATHEDRAL: ANTWERP

The cathedral (Notre Dame) is the largest and most beautiful Gothic church in Belgium. It was begun in 1352 and finished in 1616. Charles V declared of its latticed tower that it reminded him of a beautiful conception in Mechlin lace. The high altar piece in the choir is an Assumption, by Rubens, said to have been painted in sixteen days. It ranks as one of the best of the ten canvases Rubens devoted to this subject.

has over 400,000 of its natives living in this country.

BUSY INDUSTRIES

Belgium is noted for its manufacturing enterprises. At Seraing, a suburb of Liege, are located the vast works of Cockerill, where many of the famous Belgian engines which rendered such wonderful service on the Panama Canal were built. This plant could, before the outbreak of the present war, build 150 locomotives, 2,000 traction and stationary engines, and 15,000 tons of bridge material a year. It covers 260 acres of ground and gave employment to 15,000 people. The plant was established by an Englishman named Cockerill, who won the confidence of William I of the Netherlands to such an extent that he put up half the money for the founding of the business. Later Cockerill bought out the King's share and conducted it as his private business until 1840.

Malines, or, as the Flemings call it, Mechlin, is the city that gave to Mechlin lace its name, and Brussels the city that gave to a famous kind of carpet its name. In southern Belgium there are rich coal deposits, and the mining industry there goes hand in hand with the manufacturing industry, just as it does in the industrial district of Pennsylvania.

A LARGE FOREIGN BUSINESS

The vastness of Belgium's industries in proportion to area and population may be shown strikingly by a comparison. If Pennsylvania exported goods to the same value in proportion to area that Belgium does, its export trade would amount to $3,000,000,000 a year. In the case of imports, on that basis, Pennsylvania would buy nearly $4,000,000,000 worth of goods. When it is remembered that the exports of the whole United States amount to less than $2,500,000,000 a year, and our imports to less than $2,000,000,000, it will be seen how significant these figures are.

If the United States imported as much per capita as Belgium, we would buy upward of $12,000,000,000 worth of goods abroad, and if it exported as much per capita we would send goods to foreign ports to a value of nearly $10,000,000,000.

BELGIAN BEGINNINGS

While Belgium began its existence as a separate nation in 1830, its separation from the northern provinces which now constitute the Netherlands started centuries before—in 1579—as a result of religious differences. The southern provinces declared their adherence to the Spanish king and the northern group later proclaimed their adherence to France. For many years the Belgic provinces were the football of continental politics, kicked hither and thither as the battle surged from one end of the field of diplomacy and war to the other. At the close of the 18th century they became a part of France, but when the Congress of Vienna undertook to remake the map of Europe after Napoleon had unmade it, that body took the Belgic provinces in hand and reunited them with the provinces of Netherlands, in 1815, as the Kingdom of Netherlands.

But the reunion was not long to endure, for religion as well as diversity of tongue and blood prevented the grout of European pressure from solidifying the structure and binding it together in one compact and fast-holding union. So it happened that in 1830 the Belgic provinces held a little Independence Hall movement of their own, and formulated a European edition of the Declaration of Independence, setting forth the reasons why they could not live in peace and harmony with the Dutch. The Belgians felt that it was a case of the tail wagging the dog; for although they had a population of 3,400,000 as against Holland's 2,000,000, the Dutch had always a majority in the legislative body, they had the King, six out of seven of the ministers were Dutch, the Bank was Dutch, and so on all the way down the line.

THE WAR OF SEPARATION

The war of separation was a short one. The Belgians rose up, started to make war, and in two months had the Dutch where their King was asking the great powers to step in and arrange a peace. Meanwhile the Belgians were

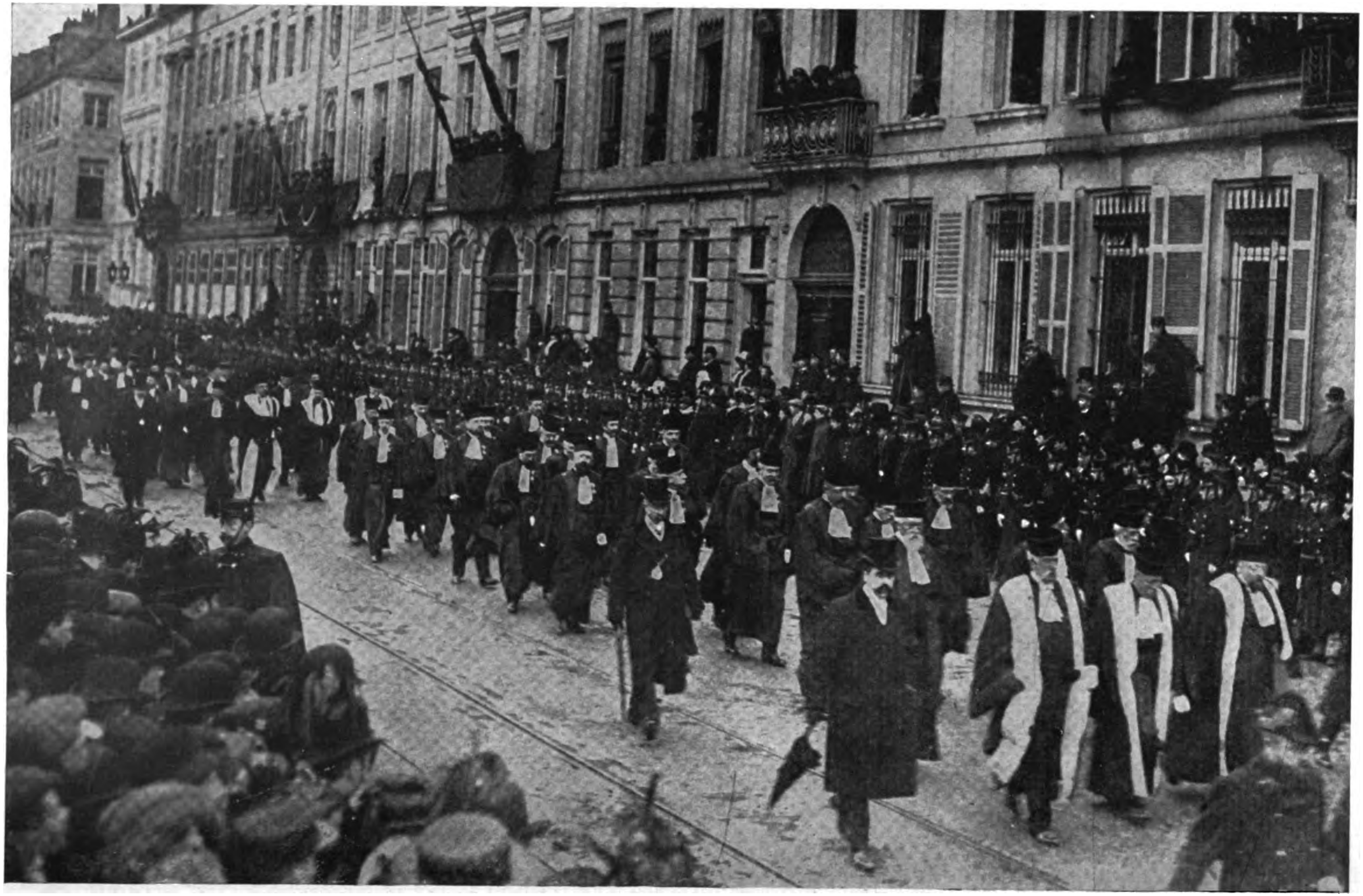


Photo and copyright by Underwood & Underwood

A PROCESSION OF JUDGES AND JUSTICES IN BRUSSELS, FOLLOWING THE REMAINS OF THE LATE KING LEOPOLD

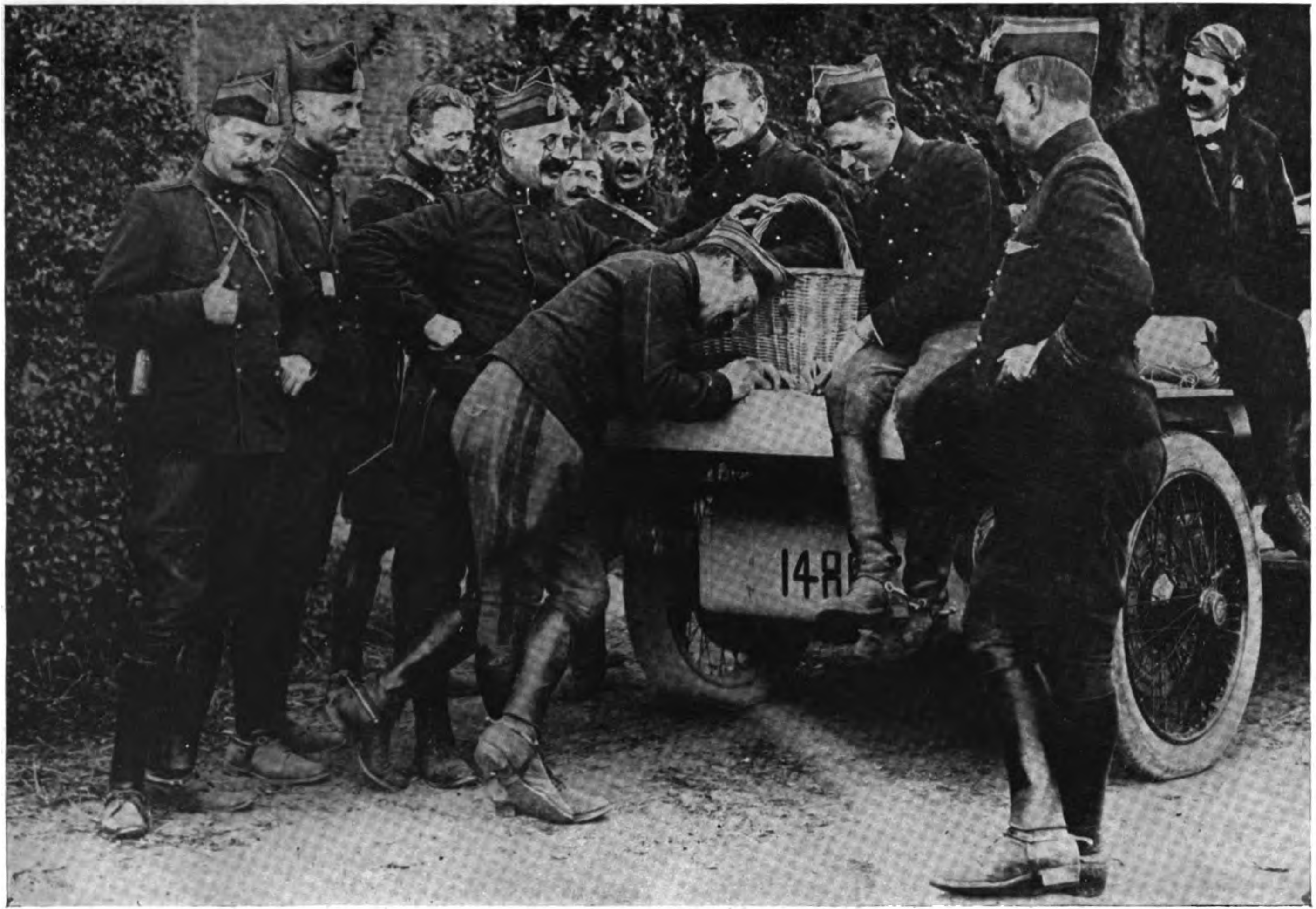


Photo and copyright by International News Service

A GROUP OF BELGIAN OFFICERS OF THE GUARDS, THE CRACK CAVALRY REGIMENT

Taking advantage of the departure of a regimental motor-car from the scene of fighting for Antwerp to write a few lines to the "girl he left behind him"

Photo and copyright by International News Service

BELGIAN PEASANTS FLEEING BEFORE THE INVADERS FROM TIRLEMONT TOWARD BRUSSELS

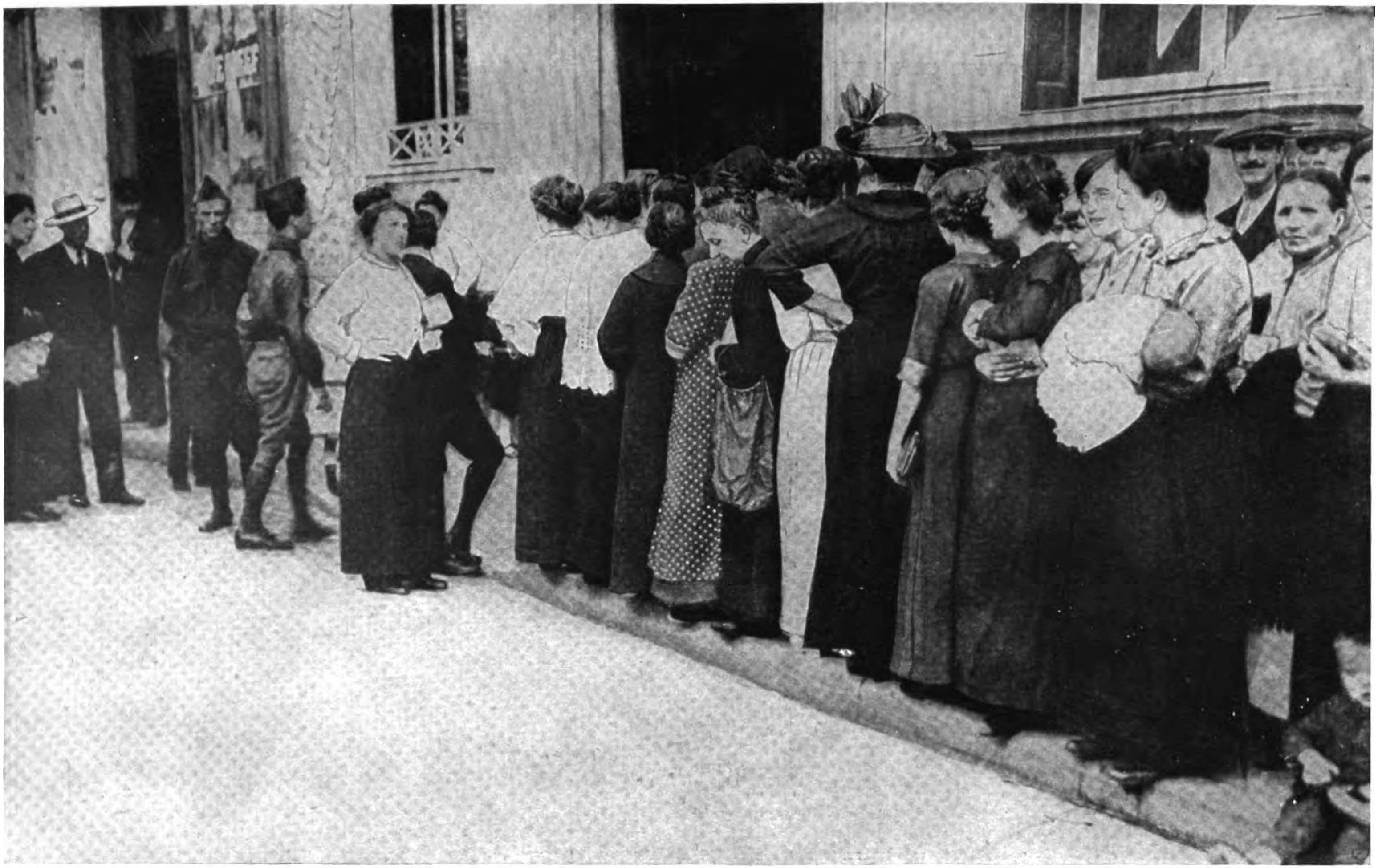


Photo and copyright by International News Service

WIVES AND MOTHERS OF BELGIAN SOLDIERS WAITING IN LINE FOR FOOD, DOLED OUT BY BELGIAN GOVERNMENT OFFICIALS

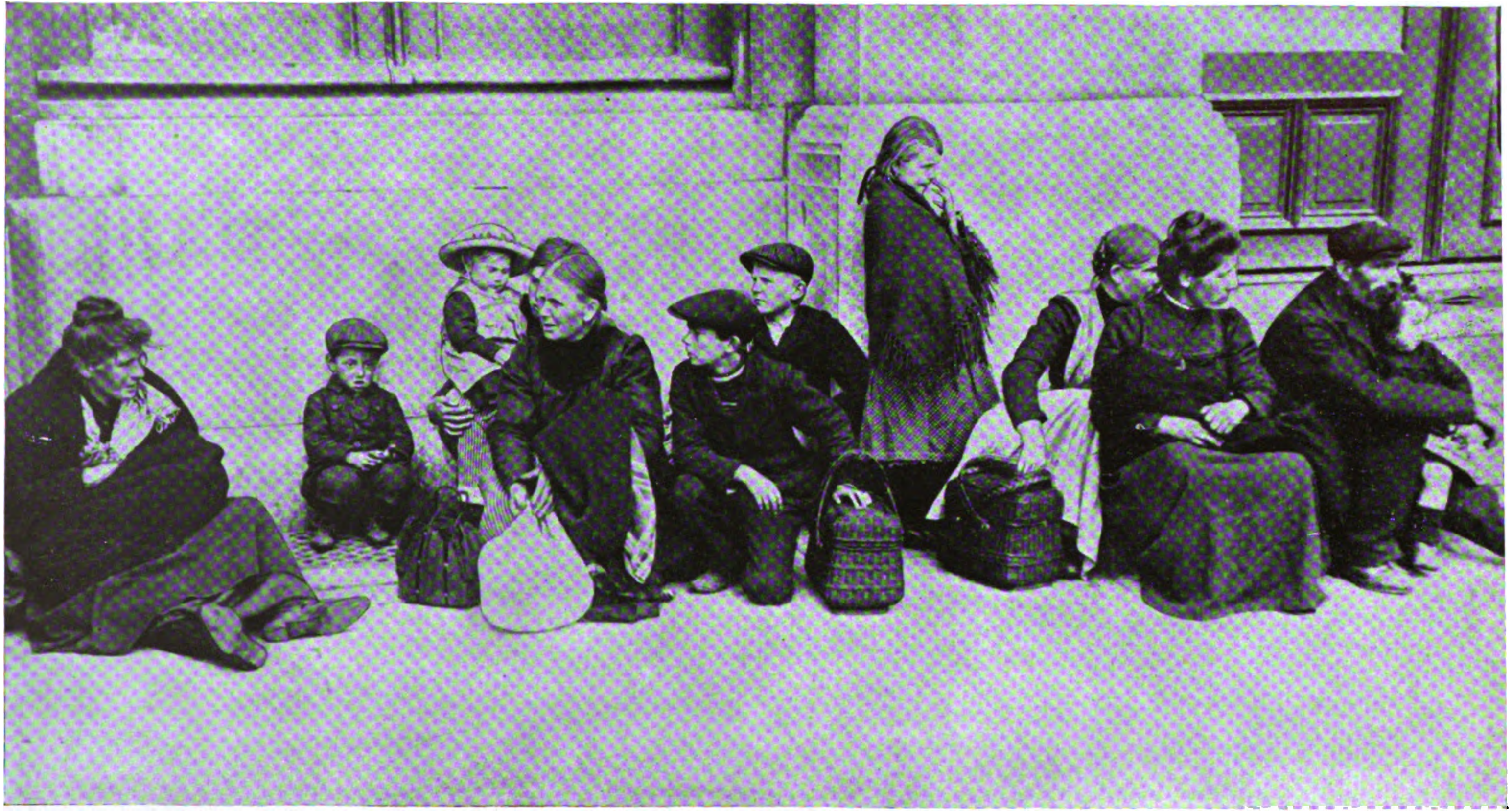


Photo and copyright by International News Service

PEASANT REFUGEES IN BRUSSELS WITHOUT MEANS OR HOMES choosing a national congress, 200 strong, which met in Brussels and decided on having an independent country, a constitutional hereditary monarchy, and one in which the Orange-Nassau family should have no part.

The new constitution was next drawn up, and Leopold, of Saxe-Coburg, was chosen King. No sooner did he assume the kingship than the Dutch stormed the gates of his country again, with a force twice as large as the Belgian army, which was routed near Louvain. Thereupon the French came to the rescue of the Belgians, and the Dutch withdrew, after a convention was drawn up which provided that both sides should retire from Belgian soil.

The London conference, which had assembled upon the plea of Holland, now drafted a treaty for the two countries to sign. Under it the Belgians got far less than they had hoped. The Grand Dutchy of Luxemburg was divided, one part going to each country, but Holland keeping the fortress and getting a part of the province of Limburg to compensate her. The Maastricht district was also divided, but Holland got the fortress there. The Scheldt River was to be open to both countries.

But the Dutch king was not ready to accept the terms laid down by outside powers, and refused to give up Antwerp. Thereupon England and France decided to use force to bring him to terms, and the French laid siege on his troops at Antwerp. They capitulated, but refused to give up two forts commanding the Scheldt seaward from Antwerp. Terms were finally arranged and the treaty was reluctantly signed by Holland.

DEFENDED HER NEUTRALITY

Belgium thereafter passed successfully through a number of domestic vicissitudes. In 1870 it began to look as though the country was again to become the victim of a great game of war. France and Germany had determined to try conclusions with the sword, and it was not a bright outlook that confronted Belgium. The government immediately prepared to meet any emergency. A large war credit was voted and the army mobilized on the frontiers. Meanwhile England, realizing the possibilities, served notice on Germany and France that she would have to insist upon a respect for the neutrality of Belgium under the treaty of 1839. Both countries agreed to respect that neutrality, and so the Franco-Prussian War was fought without Belgium's being entered by the armies of the warring countries. Wherever a few scattered troops did enter Belgium, both pursuers and pursued were disarmed and interned until the end of hostilities.

STORY OF THE CONGO

How Belgium became one of the prinpal beneficiaries in the partition of Africa constitutes an interesting story. In 1876 King Leopold summoned the geographers of Europe to a conference which resulted in the organization of "The International Association for the Exploration and Civilization of Africa." Although the work was launched first as an international project, Leopold's energy and money gradually made it Belgian in character and support. Finally the "International Association of the Congo" secured recognition as a sovereign State, the United States leading off in this recognition, and Leopold was practically its owner. Under his will he bequeathed to Belgium all "our sovereign rights" in the Congo. Step by step the relations of Belgium and the Congo were brought together until, in 1908, the Belgian government formally annexed the territory.

The Belgian Congo is nearly one-third as large as continental United States, lying in the very heart of Equatorial Africa. It has a population of about 20,000,000, some of the tribes being among the most remarkable in the Dark Continent. The government lies rather lightly upon the natives, each tribe having largely an autonomous rule. It is almost coextensive with the Valley of the Congo, which is one of the most fertile river valleys in the world. The serious handicap in the development of Belgian Congo is the great heat. Lying immediately under the Equator, the climate is torrid in the extreme, the ther-

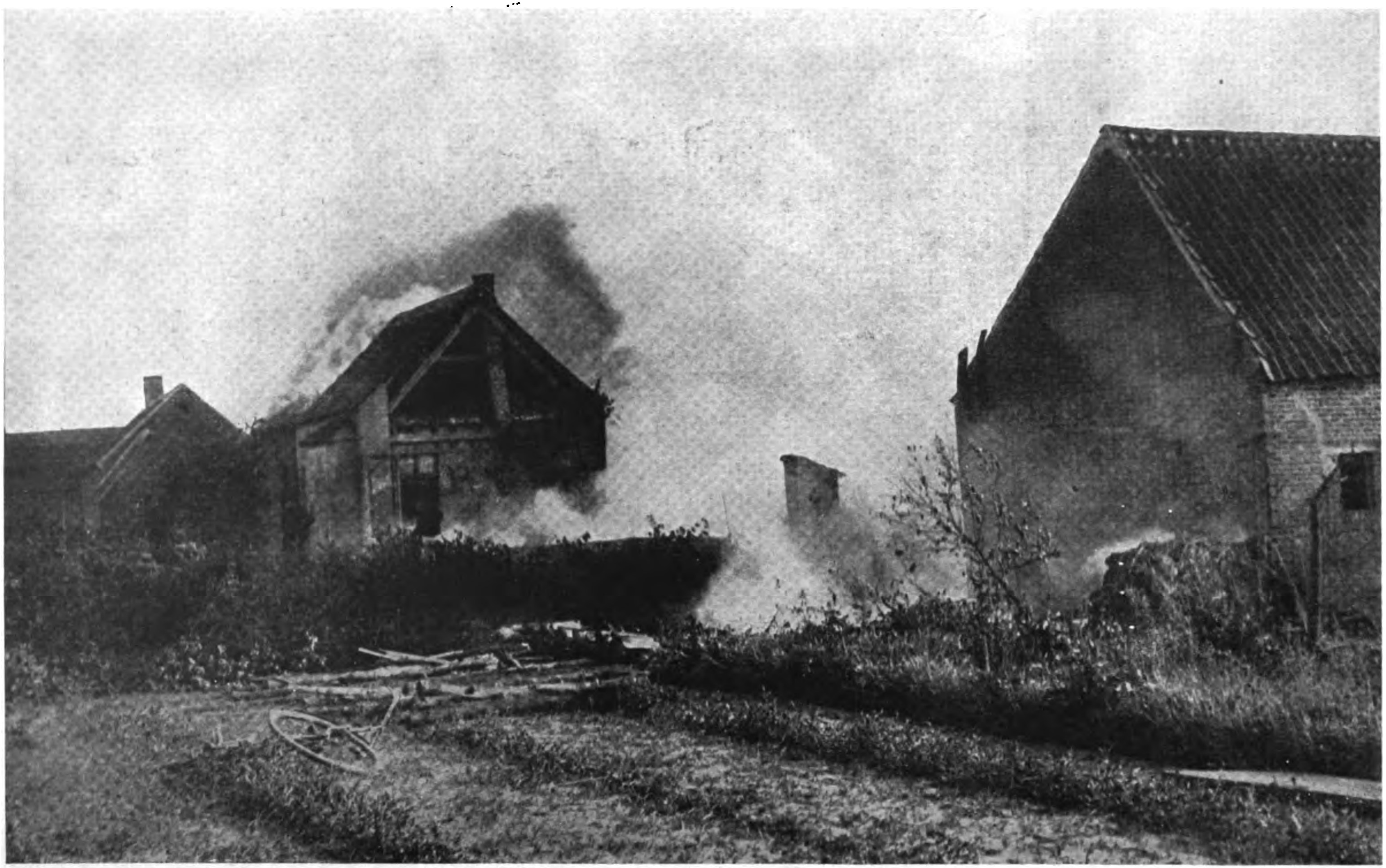


Photo and copyright by International News Service

CLEARING LAND IN FRONT OF THE FORTIFICATIONS OF ANTWERP

At Waelham, near Antwerp, the Belgians were obliged to burn several cottages in order to clear the land in front of batteries

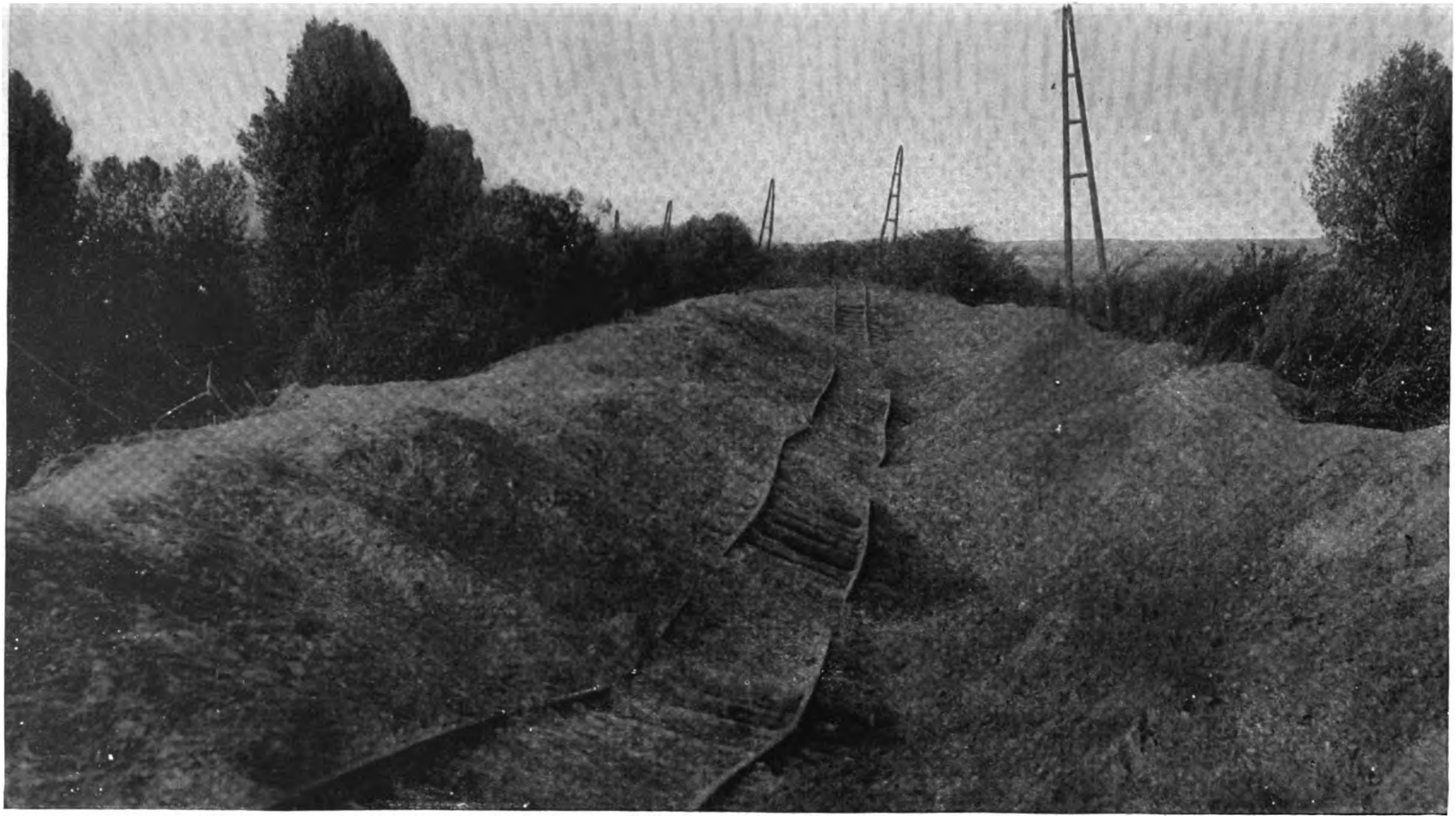
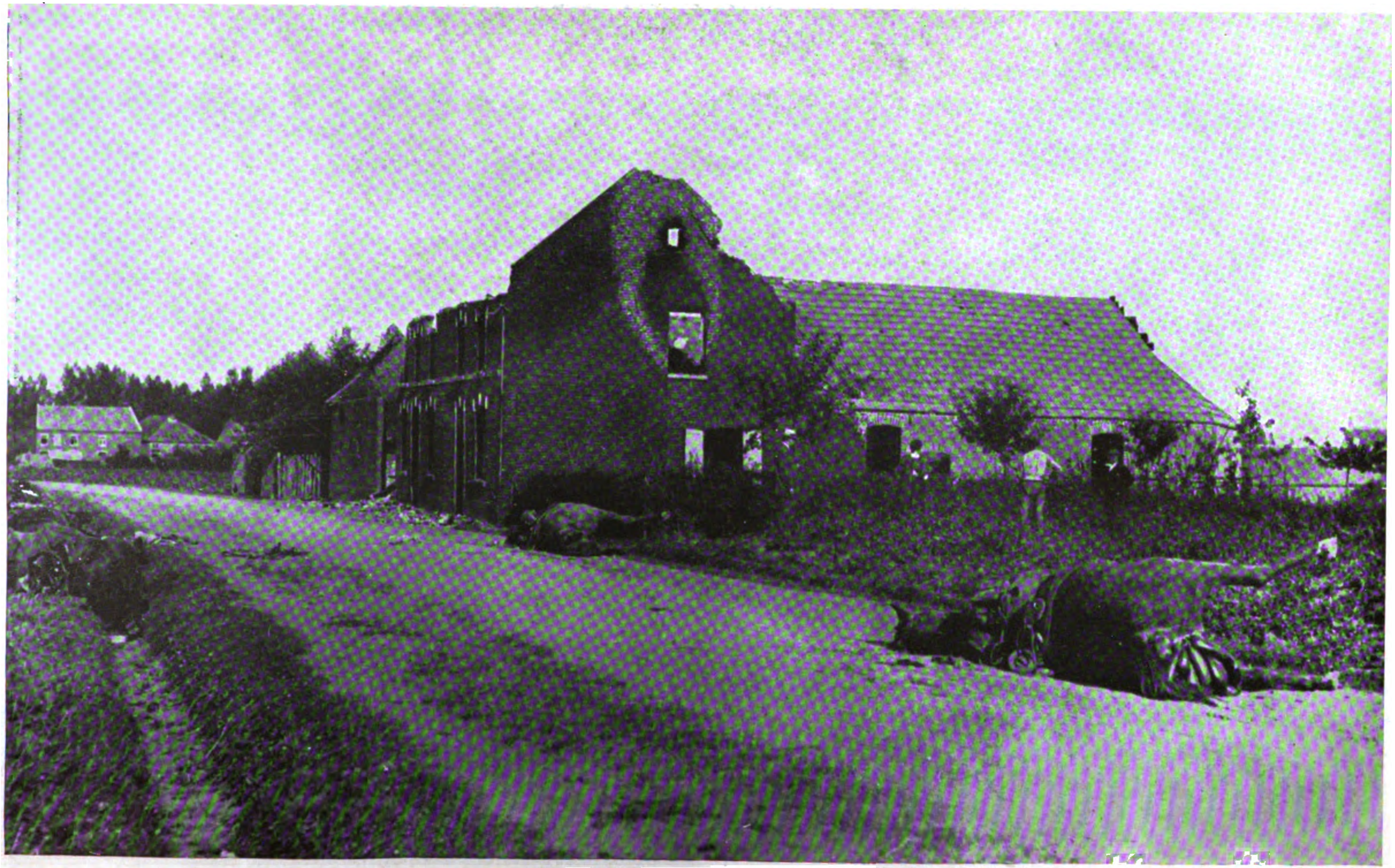


Photo and copyright by International News Service

THIS RAILROAD, IN BELGIUM, WAS NOT DESTROYED BY AN EARTHQUAKE, BUT BY THE BELGIAN ARMY, IN ORDER TO CHECK THE INVADING FORCES

Many miles of strategic railway lines and many bridges have been dynamited in this manner throughout the theater of military operations in Europe



A BELGIAN VILLAGE AFTER A BATTLE

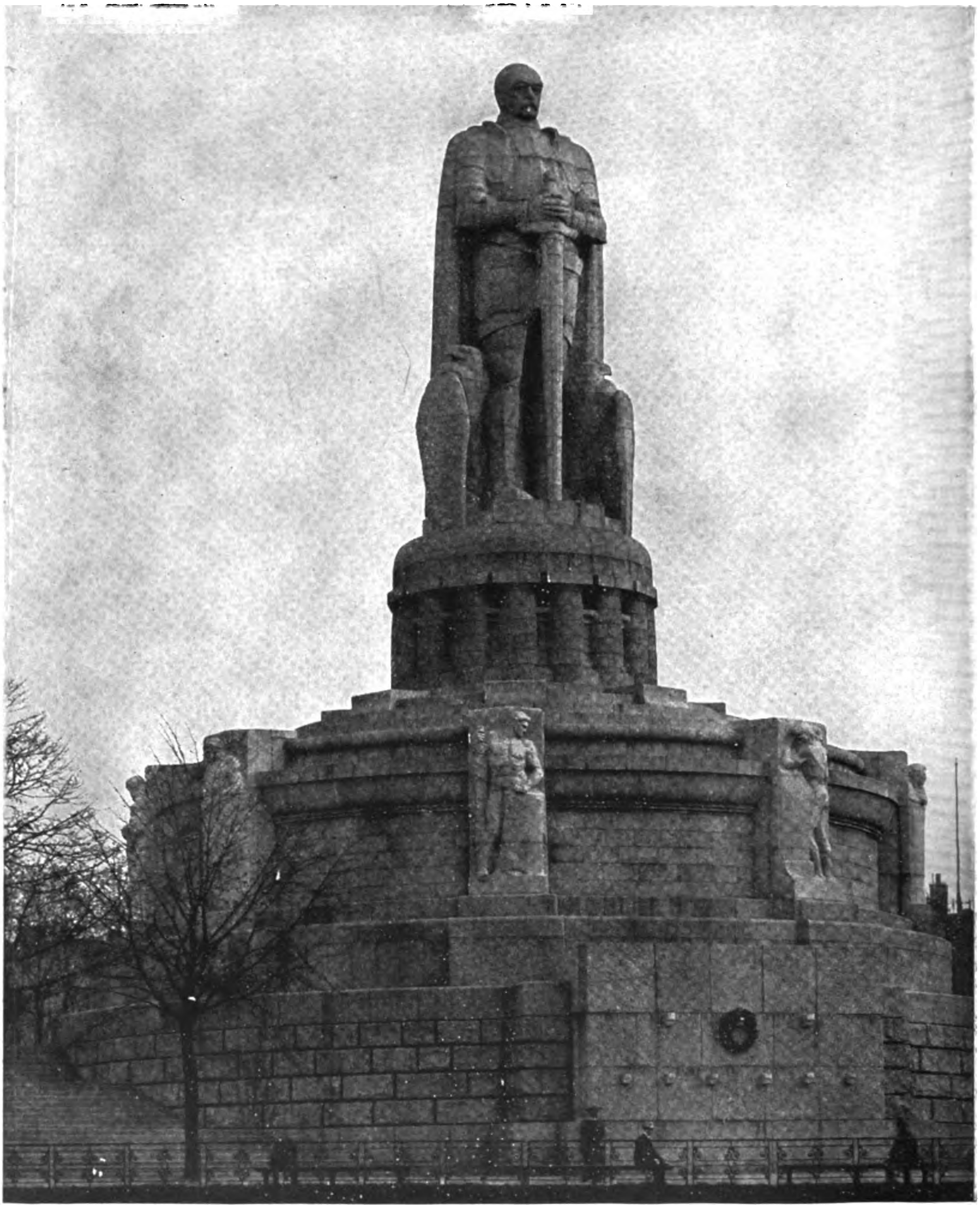
Photo and copyright by International News Service mometer ranging around 90 degrees the year around.

THE UNBEGRUDGED TRIBUTE

Belgium, the gallant little country that proclaimed her neutrality during the Franco-Prussian War, and would have suffered herself to be crushed between the upper and the nether millstones of two mighty nations rather than permit her soil to be violated; Belgium, the spirited little nation earliest to grasp the opportunities of Africa below the Mediterranean region and possessed of a diplomacy that permitted her to hold her own against the power of many great colony-hungry nations; Belgium, whose every home has given freely of its flower for the honor of the country, when it knew that the easy way was to stand aside—this is the Belgium that the whole world admires. Its people frugal and filled with homely virtues, its purposes high and peace-loving, friend or foe will not begrudge it the tribute that national courage and individual bravery demands.

Photo and copyright by International News Service

DRILLING RECRUITS IN HYDE PARK, LONDON



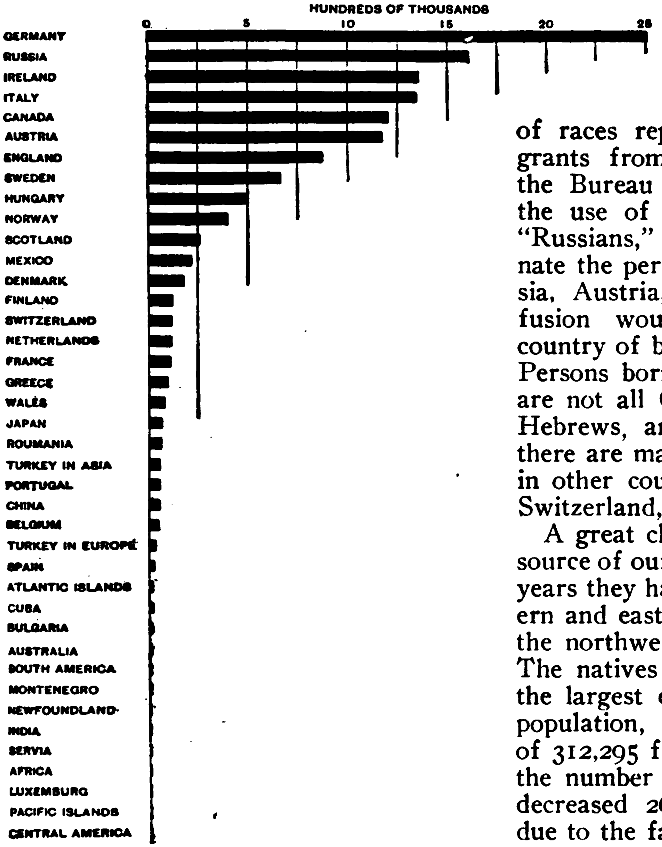
MEMORIAL TO BISMARCK IN HAMBURG, GERMANY

This gigantic statue, erected in memory of the creator of German unity, stands on a slight elevation in the city of Hamburg. It is one of the most impressive monuments in Europe.

THE FOREIGN-BORN OF THE UNITED STATES

ONE person in every seven in the United States was born outside our borders. We have today 13½ million foreign-born, which is approximately equal to the total population of Belgium and Holland combined, or of Norway, Sweden, Denmark, and Switzerland combined.

We have one-sixth as many Canadians as there are in Canada and one-half million more Germans than the city of Berlin; enough Irish to make four Dublins, and enough Italians to make three Romes.



This illustration shows the number of persons in the United States in 1910 who had been born in Germany, Russia, Austria, England, etc. It is estimated that there are 943,781 Poles in the United States, 418,370 being credited to Russia, 329,418 to Austria, and 190,096 to Germany (see the table on the next page).

Five million two hundred and fifty thousand persons came to the United States to make a permanent home during the ten years 1900-1910.* History contains no similar movement of population which in rapidity or volume can equal this. Compared to it, the hordes that invaded Europe from Asia, great and enormous as they were, were insignificant.

The table on page 266 shows the country of birth of the 13,515,000 foreign-born persons in the United States in 1910, the figures being the result of the census of that year and just published by the Bureau of the Census.

On account of the variety of races represented among the immigrants from certain foreign countries, the Bureau of the Census has avoided the use of such terms as "Germans," "Russians," "Austrians," etc., to designate the persons born in Germany, Russia, Austria, or other countries. Confusion would arise from identifying country of birth with race or nationality. Persons born in Germany, for example, are not all Germans, but include Poles, Hebrews, and others, while conversely there are many Germans who were born in other countries, particularly Austria, Switzerland, and Russia.

A great change has taken place in the source of our immigrants. During recent years they have been coming from southern and eastern Europe instead of from the northwestern part of that continent. The natives of Germany, although still the largest element in our foreign-born population, showed in 1910 a decrease of 312,295 from the figures of 1900, and the number of persons born in Ireland decreased 263,208. This decrease was due to the fact that the number of newcomers from these countries were outbalanced by the death of many who had come over in the 50's and 60's.

---

* The actual immigration, 1900-1910, was 8,500,000, but of these 3,250,000 returned to their own country.

A TABLE SHOWING THE ORIGIN OF OUR FOREIGN-BORN COUNTRYMEN

Country of birth.	1910. Number.	1900. Number.	Increase: 1900–1910.[1] Number.
TOTAL FOREIGN-BORN	13,515,886	10,341,276	3,174,610
EUROPE	11,791,841	8,871,780	2,920,061
Northwestern Europe	6,740,400	7,016,311	—275,911
Great Britain	1,221,283	1,167,623	53,660
England	877,719	840,513	37,206
Scotland	261,076	233,524	27,552
Wales	82,488	93,586	—11,098
Ireland	1,352,251	1,615,459	—263,208
Germany	2,501,333	2,813,628	—312,295
Scandinavian countries	1,250,733	1,072,092	178,641
Norway	403,877	336,388	67,489
Sweden	665,207	582,014	83,193
Denmark	181,649	153,690	27,959
Netherlands (Holland), Belgium, and Luxemburg	172,534	127,719	44,815
Netherlands	120,063	94,931	25,132
Belgium	49,400	29,757	19,643
Luxemburg	3,071	3,031	40
France	117,418	104,197	13,221
Switzerland	124,848	115,593	9,255
Southern and Eastern Europe	5,048,583	1,832,894	3,215,689
Portugal	59,360	30,608	28,752
Spain	22,108	7,050	15,058
Italy	1,343,125	484,027	859,098
Russia and Finland	1,732,462	640,743	1,091,719
Russia	1,602,782	578,102	1,024,680
Finland	129,680	62,641	67,039
Austria-Hungary	1,670,582	637,009	1,033,573
Austria	1,174,973	491,295	683,678
Hungary	495,609	145,714	349,895
Balkan Peninsula	220,946	....	....
Roumania	65,923	15,032	50,891
Bulgaria	11,498	(3)	....
Servia	4,639	(3)	....
Montenegro	5,374	(3)	....
Greece	101,282	8,515	92,767
Turkey in Europe	32,230	[4] 9,910	....
Europe, not specified	2,858	[5] 22,575	....
ASIA	191,484	120,248	71,236
Turkey in Asia	59,729	(4)	....
China	56,756	81,534	—24,778
Japan	67,744	24,788	42,956
India	4,664	2,031	2,633
All other countries	2,591	11,895	—9,304
AMERICA [6]	1,489,231	1,317,380	171,851
Canada and Newfoundland	1,209,717	1,179,922	29,795
Canada—French	385,083	[7] 395,126	—10,043
Canada—Other	819,554	[7] 784,796	34,758
Newfoundland	5,080	(7)	....
West Indies [8]	47,635	25,435	22,200
Cuba	15,133	11,081	4,052
Other West Indies	32,502	14,354	18,148
Mexico	221,915	103,393	118,522
Central and South America	9,964	8,630	1,334
Central America	1,736	3,897	—2,161
South America	8,228	4,733	3,495
ALL OTHER	43,330	31,868	11,462
Africa	3,992	2,538	1,454
Australia	9,035	6,807	2,228
Atlantic islands	18,274	9,768	8,506
Pacific islands [9]	2,415	2,013	402
Country not specified	2,687	2,546	141
Born at sea	6,927	8,196	—1,269

---

[1] A minus sign (—) denotes decrease.

[2] Less than one-tenth of 1 per cent.

[3] Included under "Europe, not specified," in 1900.

[4] Turkey in Asia included with Turkey in Europe in 1900.

[5] Includes 20,324 persons reported as born in Poland, without specification as to whether German, Austrian, or Russian Poland.

[6] Outside of the United States.

[7] Newfoundland included with Canada for 1900.

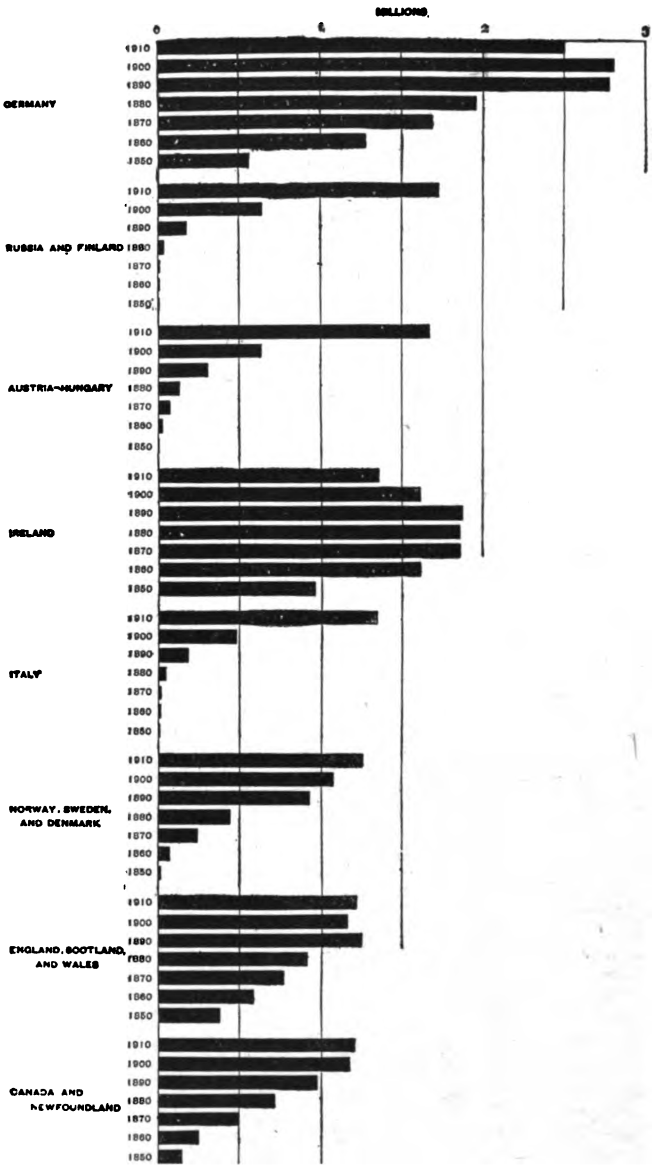
[8] Except Porto Rico.

[9] Except Hawaii and Philippine Islands.

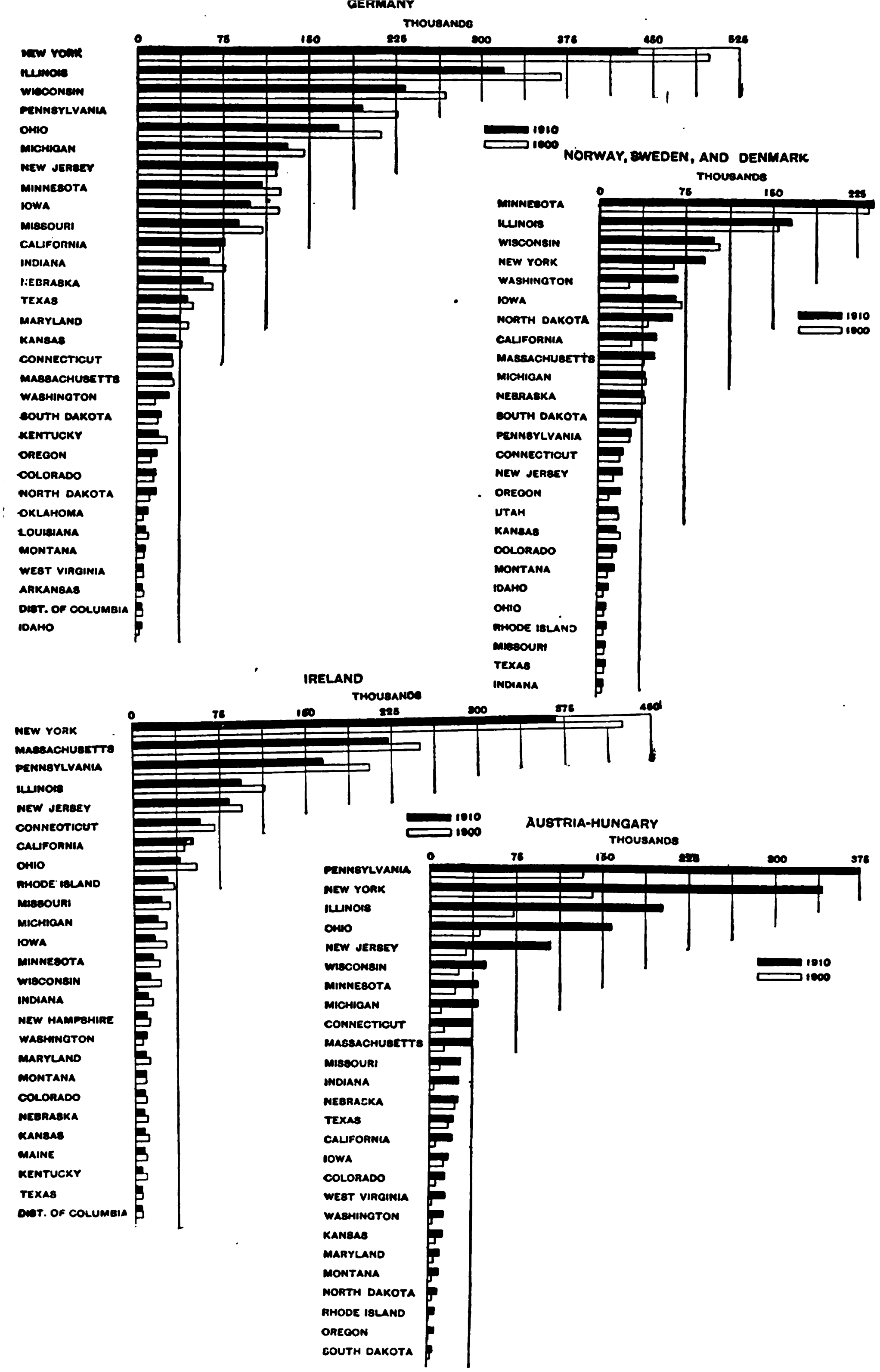
The diagram on this page shows the principal sources of our new countrymen at each of the last seven censuses. Italy, Austria-Hungary, and Russia, which 20 years ago sent us practically no immigrants, of recent years have been pouring over hundreds of thousands, with the result that the newcomers from these three countries are rapidly approaching the total from Germany.

The illustrations on pages 268 and 269 show the States where the immigrants have settled. It is an unfortunate fact that nearly three-fourths of the immigrants, 72.1 per cent, have remained in our large cities. New York alone has nearly 2,000,000 foreign-born, of whom 484,000 are natives of Russia, 341,000 of Italy, 278,000 of Germany, 253,000 of Ireland, and 190,000 of Austria. Chicago contains three-quarters of a million of foreign-born, 182,000 being from Germany, 132,000 from Austria, 122,000 from Russia, 66,000 from Ireland, and 63,000 from Sweden.

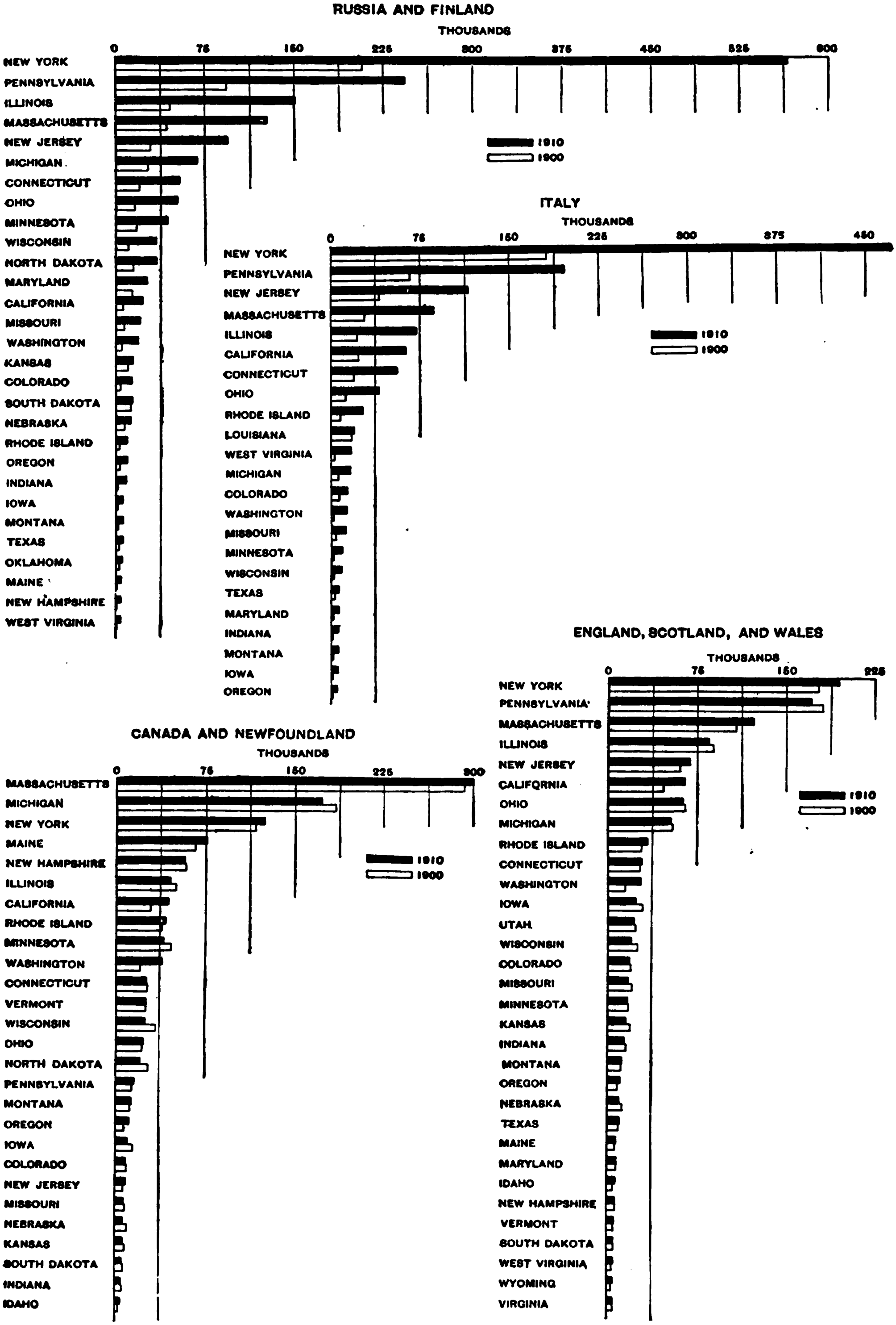
While the total foreign-born population of the United States in 1910 amounted to 13,345,545, it is interesting to note that the people born in this country, but one or both of whose parents were of foreign birth, reached a total of 18,897,837. Thus 32,000,000, or more than one-third of the people in the United States, are foreign-born, or have one or two parents who were foreign-born.



This illustration shows the number of foreign-born in the United States at each census, beginning with 1850

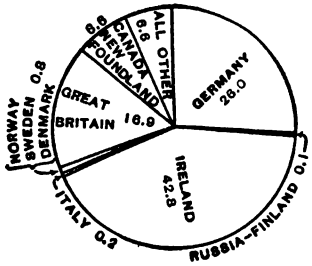


This illustration shows where our immigrants from Germany, Scandinavia, Ireland, and Austria-Hungary settle. The Poles, of whom there are about 943,000 in the United States (see page 265), have settled in Pennsylvania, 188,000; New York, 169,000; Illinois, 148,000; New Jersey, 70,000; Michigan, 63,000; Massachusetts, 58,000; Wisconsin, 51,000; Ohio, 41,000, and Connecticut, 35,500.

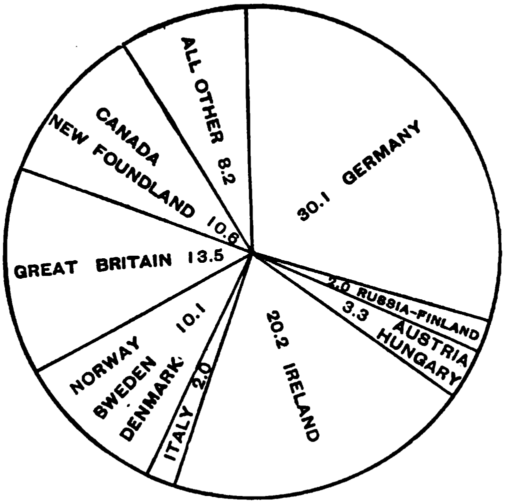


This illustration shows where our immigrants from Russia, Italy, Canada, and Great Britain settle. It is unfortunate that nearly three-quarters of our immigrants, 72.1 per cent. settle in cities (see page 271).

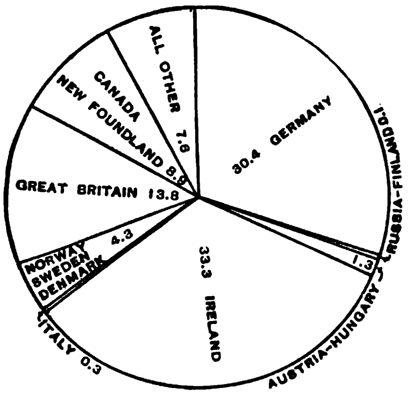
Total foreign-born, 1850: 2,244,602



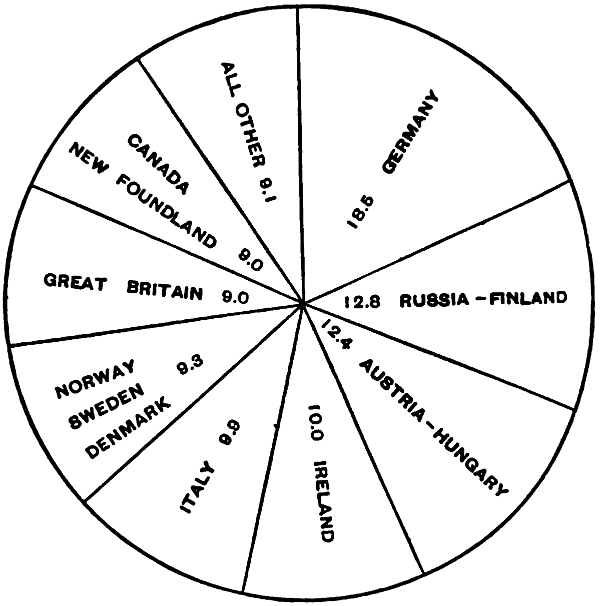
Total foreign-born, 1890: 9,249,560



Total foreign-born, 1870: 5,567,229



Total foreign-born, 1910: 13,515,886



These diagrams show the immense growth in the numbers of our foreign-born since 1850 and the relative proportion from each of the principal sources. One-third of the people of the United States are foreign-born, or have one or two parents who were foreign-born (see page 267). The diagrams, pages 265-270, are from the Bureau of the Census.

THIS INTERESTING TABLE GIVES THE NUMBER AND PROPORTION OF FOREIGN-BORN IN EACH OF OUR CITIES HAVING 100,000 OR MORE POPULATION

City.	Foreign-born population.	Per cent of the population that is foreign-born.	Countries having highest per cent of foreign-born.	Countries having second highest per cent of foreign-born.
Albany, N. Y.	18,218	18.2	Germany	Ireland
Atlanta, Ga.	4,501	2.9	Russia and Finland	Germany
Baltimore, Md.	77,662	13.9	Germany	Russia and Finland
Birmingham, Ala.	5,730	4.3	Italy	England
Boston, Mass.	243,365	36.3	Ireland	Russia and Finland
Bridgeport, Conn.	36,264	35.5	Hungary	Ireland
Buffalo, N. Y.	118,689	28.0	Germany	Italy, also Russia and Finland
Cambridge, Mass.	35,328	33.7	Ireland	Russia and Finland
Chicago, Ill.	783,428	35.9	Germany	Austria
Cincinnati, Ohio	56,859	15.6	Germany	Ireland, also Hungary
Cleveland, Ohio	196,170	35.0	Austria	Germany
Columbus, Ohio	16,363	9.0	Germany	Ireland
Dayton, Ohio	13,892	11.9	Germany	Hungary
Denver, Col.	39,749	18.6	Germany	Russia and Finland
Detroit, Mich.	157,534	33.8	Germany	Russia and Finland
Fall River, Mass.	50,958	42.7	England	Ireland
Grand Rapids, Mich.	28,387	25.2	Netherlands, Belgium, and Luxemburg	Germany
Indianapolis, Ind.	19,842	8.5	Germany	Ireland
Jersey City, N. J.	77,987	29.1	Germany, also Ireland	Russia and Finland
Kansas City, Mo.	25,466	10.3	Germany	Russia and Finland
Los Angeles, Cal.	66,133	20.7	Germany	England
Louisville, Ky.	17,473	7.8	Germany	Ireland
Lowell, Mass.	43,494	40.9	Ireland	England
Memphis, Tenn.	6,520	5.0	Germany	Italy
Milwaukee, Wis.	111,529	29.8	Germany	Russia and Finland
Minneapolis, Minn.	86,099	28.6	Sweden	Norway
Nashville, Tenn.	3,017	2.7	Russia and Finland. Ireland Germany	England Hungary
New Haven, Conn.	42,989	32.2	Italy	Ireland
New Orleans, La.	28,333	8.4	Italy	Germany
New York	1,944,357	40.8	Russia and Finland	Italy
Manhattan Borough	1,116,477	47.9	Russia and Finland	Italy
Bronx Borough	149,427	34.7	Germany	Russia and Finland
Brooklyn Borough	574,730	35.2	Russia and Finland	Italy
Queens Borough	79,329	27.9	Germany	Italy
Richmond Borough	24,394	28.4	Germany	Italy
Newark, N. J.	111,007	31.9	Germany	Russia and Finland
Oakland, Cal.	40,846	27.2	Germany	Ireland
Omaha, Neb.	27,179	21.9	Germany	Sweden
Paterson, N. J.	45,485	36.2	Italy	Russia and Finland
Philadelphia, Pa.	384,707	24.8	Russia and Finland	Ireland
Pittsburgh, Pa.	140,924	26.4	Germany	Russia and Finland
Portland. Ore.	50,312	24.3	Germany	China
Providence, R. I.	76,999	34.3	Italy	Ireland
Richmond, Va.	4,136	3.2	Germany	Russia and Finland
Rochester, N. Y.	59,076	27.1	Germany	Italy
St. Louis, Mo.	126,223	18.4	Germany	Russia and Finland
St. Paul, Minn.	56,657	26.4	Germany	Sweden
San Francisco, Cal.	142,298	34.1	Germany	Ireland
Scranton, Pa.	35,122	27.0	Russia and Finland	Ireland
Seattle, Wash.	67,456	28.4	Sweden	Norway
Spokane. Wash.	21,820	20.9	Sweden	Germany
Syracuse, N. Y.	30,848	22.5	Germany	Russia and Finland
Toledo, Ohio	32,144	19.1	Germany	Russia and Finland
Washington, D. C.	24,902	7.5	Ireland Germany	Russia and Finland
Worcester, Mass.	48,596	33.3	Ireland	Russia and Finland

Of the 50 cities in the United States having over 100,000 population, in 28 the Germans are the most numerous in the foreign-born element, in 4 the Irish, in 5 the Italians, and in 5 the Russians.

THE REMARKABLE GROWTH OF EUROPE DURING 40 YEARS OF PEACE

THE remarkable increase in the population of Europe in recent years, and particularly of the countries now at war, offers the basis for some extremely interesting speculations.

Russia in Europe, in the 40 years from 1872 to 1912, shows an increase of approximately 90 per cent in her population; Germany, an increase of 62 per cent; England, an increase of 59 per cent (Great Britain and Ireland, 42 per cent); Austria-Hungary, practically 40 per cent, while, on the other hand, France, in the same period, shows an increase of less than 10 per cent.

If the Russians in Europe multiply as rapidly during the next 40 years, there will be 267,000,000 of them in European Russia in 1952. The following table gives an estimate of the approximate population of the European countries based upon the growth of the period 1872-1912 and for the same areas.

	Population, 1872.	Population, 1912.	Estimated population of area in 1952.
Austria-Hungary	36,000,000	50,005,000	69,500,000
Belgium	5,200,000	7,600,000	9,700,000
Bulgaria	....	4,400,000	6,100,000
Denmark	1,800,000	2,800,000	4,300,000
France	36,100,000	39,600,000	43,100,000
Germany	41,200,000	66,300,000	107,900 000
Greece	1,500,000	*5,000,000	9,000,000
Italy	27,000,000	34,700,000	44,600,000
Netherlands	4,000,000	6,200,000	9,400,000
Norway	1,800,000	2,400,000	3,200,000
Portugal	4,000,000	5,430,000	7,600,000
Roumania	1,600,000	2,900,000	4,100,000
Russia in Europe	74,100,000	141,300,000	267,000,000
Servia	1,600,000	2,950,000	5,700,000
Spain	16,600,000	19,950,000	23,800,000
Sweden	4,300,000	5,600,000	7,700,000
Switzerland	2,700,000	3,780,000	4,900,000
Turkey	8,500,000	*7,900,000	9,000,000
United Kingdom:			
England and Wales	22,900,000	36,500,000	58,300,000
Ireland	5,400,000	4,300,000	3,500,000
Scotland	3,400,000	4,700,000	6,300,000
TOTAL EUROPE	299,800,000	454,600,000	705,000,000

* Changes in area.

The population of Europe in 1772 was only 142,000,000. From 1772 to 1872 the increase was at the rate of about 16 per cent for each 20-year period. Since that time it has been much more rapid; practically 20 per cent in the 20-year period 1872 to 1892, and a 26 per cent increase in the 20-year period 1892 to 1912.

Germany's population at the close of the Franco-Prussian war, 40 years ago, was less than 200 persons per square mile, but is now over 300 per square mile. England's population in 1871 was 389 per square mile, and in 1911, 618 per square mile (Great Britain and Ireland had 262 people per square mile 40 years ago, but have 374 today). Russia's population, while much less per square mile than that of the smaller countries, shows a larger percentage of gain than does Germany or England, while, on the other hand, France, which in 1872 had 174 inhabitants per square mile, showed in 1911 but 189, a very slight increase in density in the 40-year period when compared with that of the other nations in question.

Curiously, too, this large increase in population has occurred in the face of heavy losses by emigration. England, which shows a gain of practically 60 per cent in population in 40 years, lost in the same 40 years nearly 6,000,000 by emigration, or approximately one-fourth as many as her population in 1871; Germany, which shows a larger per cent of gain, lost by emigration, also approximately, 6,000,000; Russia, approximately 3,000,000; Italy and Austria-Hungary, about 3,000,000 each, and France only a few thousands.

THE WORLD'S POPULATION HAS DOUBLED IN 100 YEARS

A comparison of the best estimates of the world's population of 100 years ago with accepted statistics of today indicates that the population of the world has more than doubled in a single century, and that this increase has been shared in a considerable degree by countries which were even then looked upon as overpopulated. Conservative estimates of the population of the world for the first decade of the last century put the total at approximately 700,000,000, while the latest census records and official estimates show a grand total for the world of approximately 1,650,000,000 in 1914, an apparent increase of about 130 per cent in the last 100 years. In that period Europe shows an increase from 190,000,000 to 450,000,000, a gain of 137 per cent, while America as a whole shows an increase of 700 per cent, and the United States alone more than 1,000 per cent.

This wonderful change in the power of the world and of limited areas such as Europe to sustain a very dense population is largely the result of changes in methods of transportation and production which have come into use during the last century. Prior to the advent of the railroad the population of a given area was dependent upon the food-producing power of the territory which it occupied or with which it could communicate by water transportation, and was also dependent upon a like area as a market for its own products. Enormous areas of high producing power, but lying a hundred miles or more from the water's edge, contributed little to the food supply of the outside world, and consumed little from abroad because of the lack of facilities for transporting their products to the river or ocean; and population moved into those areas but slowly for the same reason.

In those sections of the world in which the population was already sufficiently dense to require all the food which the surrounding country could supply, a failure of crops meant famine and loss of life from starvation and pestilence. Food supplies which might exist within a few hundred miles were as inaccessible as though on the other side of the globe. The people living in the cities could exchange their manufactures for food products only in a limited area; and with the congestion of population within walled cities and their absence of proper sanitary facilities, they came justly to be described as "men destroyers" and vampires feeding upon the surrounding country, from which they had to draw men and women to replace the losses caused by disease and lack of food. Of those born in the cities but a small percentage escaped the dangers of childhood.

But with the advent of the railroad and the steamship, and with the application of steam power to production, all this was changed. The city, town, or community was no longer dependent upon the immediately surrounding area for its food supply or for a market for its products. The world's great productive areas, formerly useless because of their inaccessibility, could now be relied upon for a food supply, even though a thousand or several thousand miles distant from the point at which they were required.

The workman of densely populated England may now with a single day's labor pay the cost of transporting a year's supply of bread and meat from America to his own door, and may market the products of his labor in some equally distant part of the world. This explains why it is that England, then as now one of the most densely populated countries of the world, has quadrupled its population in a century and increased it 60 per cent in the past 40 years. Other countries of Europe, with a greater area in which to enlarge their agricultural as well as manufacturing industries, have shown an even larger per cent of growth.

Even the Orient, which is usually looked upon as of slow growth, has shared, in certain sections at least, in the rapid increase in population which has characterized the last century. Japan, with its dense population and limited area, shows by its census records a gain of 57 per cent in the last 40 years, and Java, one of the most densely populated islands in the world, has apparently increased 60 per cent in a like period. As to China, there is a wide difference of opinion. Mr. Rockhill, our former minister to that country, is of the opinion that the estimates of both population and growth are excessive, and that there has been little, if any, increase in total population in recent years, and the new government of China gives the total population for all China in 1910 at 321,000,000 instead of the usual estimate of 420,000,000.

The wonderful progress of the science of preventive medicine is, however, the principal cause of our increasing millions. It was not so long ago that Russia had a death rate of 37 per 1,000. That has been cut down to about 30 per 1,000; applied to a population of 141,000,000, which represents European Russia, and the result shows a saving of 987,000 lives annually in that country. England's death rate fell from 24 per 1,000 in the decade from 1861 to 1870, inclusive, to about 14 per 1,000 in 1910. Apply that decline to the population of the United Kingdom, and the result shows nearly 500,000 fewer deaths annually, in proportion to population, in 1910 than in the decade between 1860 and 1870.

During this period, by the mastery of typhoid through water and milk control, of diphtheria through vaccination, of cholera through isolation, and of many other epidemic diseases through various methods of prophylaxis, death rates of many cities have been cut down to half their former proportions. The whole of Germany had a death rate of 27 per 1,000 50 years ago. In 1910 its death rate was 17 per 1,000. That means, applied to Germany's present day population, an annual saving of 640,000 lives.

The developments of the future in the matter of world population promise to be quite as striking as those of recent years. Should the population of the world grow from 1912 to 2012 as it grew from 1812 to 1912, a century hence it will be practically 3,480,000,000, while Europe will have a population of at least 600,000,000 by the middle of this century, and a density in certain sections ranging up to more than 800 per square mile as against the density of 600 per square mile in England at the present time.

What effect the war will have upon the future consuming and producing power of Europe cannot, of course, be determined now. Certainly, however, whatever changes may come in political boundaries within that continent, Europe must continue to be a densely populated manufacturing area, and therefore an importer of foodstuffs and an exporter of manufactures, with a constant increase in her demands upon other parts of the world for foodstuffs and raw material, and a corresponding necessity to produce and distribute manufactures in payment therefor. The war may temporarily close many of her factories and even destroy some of them, and at the same time reduce the working population, but Europe will continue to be the great manufacturing section of the world and the great importer and consumer of the food products and raw materials of America, Australia, and the now undeveloped sections of the tropical world.

O. P. Austin.

THE GERMAN NATION

NOT since the hand of history first began to write down the rise and fall of nations has there been recorded a more wonderful story of a people's existence than that to be found in the annals of the Germans. The star of their destiny more than once has mounted to the zenith of European power, then has passed down to the western horizon, only to rise again, because of the extraordinary recuperative strength of the German race.

This rise to imperial power and decline to national impotence, succeeded again by shifting strength, has been coincident with the rise of a great leader and the succession of a weak one.

"A world united" under Charlemagne, Germany became "the land divided" under his sons; and from that day to this the tide of German power has flowed and ebbed according to whether genius or mediocrity sat upon the German throne.

The Germany of today is a wonderful empire—whatever the Book of Fate may have in store for its tomorrow. Its people are so old in the history of Western civilization that Julius Cæsar, when he became governor of Gaul, encountered them to the east of the Rhine, and bore testimony to their fighting spirit and their military prowess; yet its government is so young that men still on the sunny side of fifty can remember when it came into being. The present German Empire was born out of the Franco-Prussian War; what its future shall be is now in process of determination.

SMALL BUT MIGHTY

The average American has read so much about the might of the German army, the prowess of the German navy, the triumphs of the German factory, and the commercial conquests of the German exporter that he finds it a surprise when he is told that Germany, territorially, is so much smaller than Texas that a slice as big as all New England could be cut out of the Lone Star State and what remained would still be larger than the German Empire.

But if Germany be small in territorial extent, it has been powerful in population, strong in industrial resources, and great in technical achievement. Only Belgium, Netherlands, Japan, and the United Kingdom, among the nations of the earth, have a denser population. Only China, India, Russia, and the United States have a more numerous population. Only Great Britain is a greater buyer in the world's markets, and only the United States and Great Britain are greater sellers in those markets.

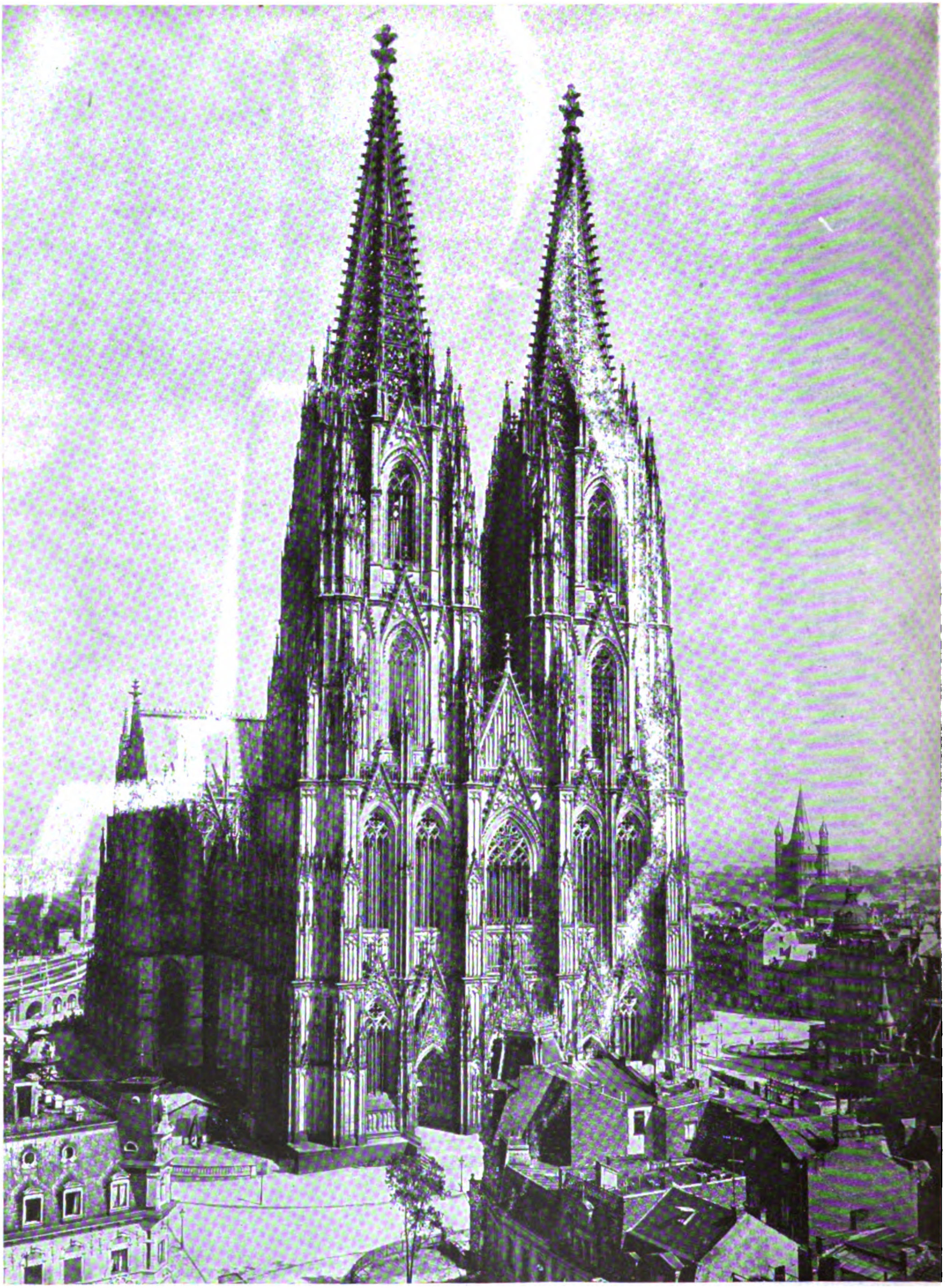
How close has been the competition of these three great countries for leadership in the world's export trade is revealed from an examination of the record. The United States led in 1913, with exports valued at $2,428,000,000; Great Britain came second, with $2,371,000,000; Germany took third place, with $2,131,000,000; France, with fourth place, had an export business of only $1,295,000,000.

During the years in question Germany imported nearly one-eighth of all the world had to sell, and exported more than one-ninth of what the world wanted to buy.

GERMAN AGRICULTURAL PRODUCTS

Although embracing only one-fifteenth of the area of Europe, Germany, in 1912, produced one-seventh of its wheat, a fifth of its oats, more than a seventh of its barley, more than a fourth of its rye, and over a third of its potatoes. It yields place among the producing nations of Europe only to Russia.

To what a remarkable extent the German farmer has mastered the science of agriculture is shown by a comparison of his per-acre yields with our own. If we had grown as much wheat to the acre in 1913 as the Germans, our crop would have been two and a half billion bushels instead of three-fourths of a billion bushels. If our farmers had grown as much oats to the acre as the Germans, our yield would have been 60 per cent of the



THE STATELY CATHEDRAL AT COLOGNE, GERMANY

Hundreds of thousands of Americans have admired this wonderful edifice, which was begun in the thirteenth century. It is considered one of the finest monuments of Gothic architecture in Europe. It is in the form of a cross, 480 feet long, with a breadth of 282 feet.

world's oat crop instead of the 25 per cent that it was. Had our barley harvest been as heavy per acre as that of the German farmer, we would have had 375,000,000 bushels instead of 178,000,000. If our potato growers had grown as many tubers to the acre as the German potato growers, our yield would have been 865,000,000 bushels instead of 331,000,000.

These figures are no more impressive as showing to what degree of mastery of the soil the Germans have come than they are as showing what vast crops we will be able to have in this country when our farmers really learn how to farm.

Where the American farmer uses many acres and gets a small yield, the German farmer uses a very few acres and compels the ground to give him a large yield. There are approximately the same number of farms in Germany as in the United States — 5,756,000 in Germany and 5,737,000 in our country. Of the German farms, 2,733,000 have less than 2.47 acres in them; of the American farms, only 41,385 have three acres or less. Of the remaining German farms, 2,306,000 have less than 25 acres in them. We have 3,800,000 farms of 50 acres or more. The Germans have fewer than 700,000 that are larger than 25 acres in extent.

The German farmer is not like the American farmer when it comes to choosing the good land and allowing that which is not so good to lie idle. More than 50 per cent of the farm area of the United States is unimproved, while only 9 per cent of the available area in Germany lies unused.

Germany's great agricultural productive capacity, which shows a greater per-acre yield of every staple crop than any other country in the world enjoys, has come from a mastery of the simple, yet complex, science of plant nutrition. We know that humanity requires three things for its existence—food, drink, and raiment. The plant kingdom requires three things that man can give it for its growth — nitrogen, potash, and phosphorus. The Germans have nearly all the actively worked potash deposits in the world; and recently they have discovered that instead of buying nitrogen and phosphoric acid from South America, they can get nitrogen from the air, from coke-ovens, and from the gasification of peat and lignite. Through the Thomas-Gilchrist process it has become possible for them to get their phosphoric acid as a by-product of smelting, the slag being made into what is called phosphate flour. The result of these conditions are that Germany sows more commercial fertilizer than any other three nations on earth.

NOT EQUAL TO DEMANDS

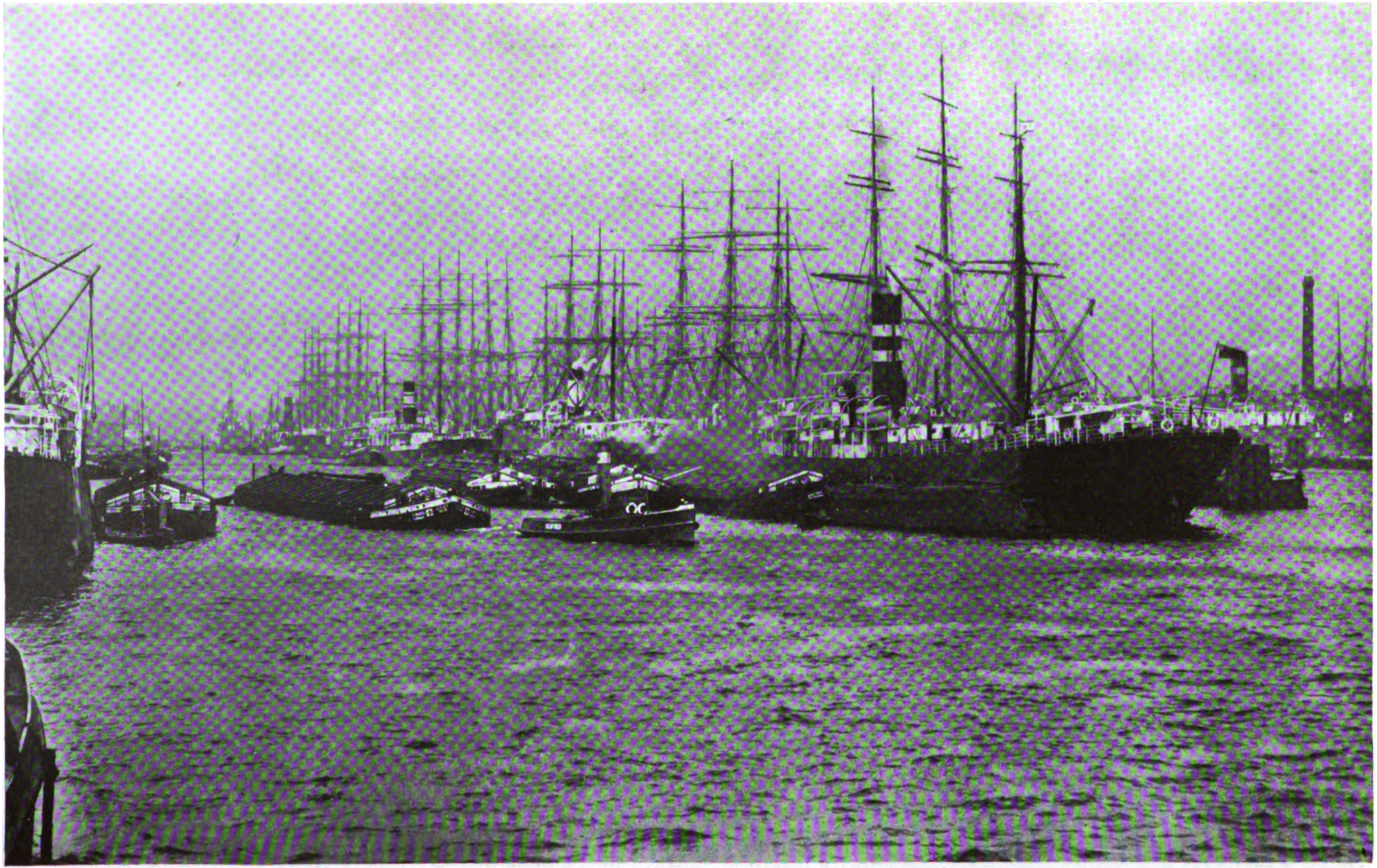
But with all of the coaxing of the soil that the German farmer administers his lands are not able to respond with enough provender to keep the nation from going hungry. During a recent year Germany had to import grain and other crop products to a value of a quarter-billion dollars in excess of its exports of those commodities. It bought more groceries and confections than it sold, the balance against it being $120,000,000; and it imported cattle, fats, and oils to a value of a hundred million dollars in excess of its exports of those commodities.

Not only has Germany had to buy vast quantities of food products in excess of what it sold, but also vast quantities of raw materials. The balance of its account in the matter of ores, asbestos, etc., amounted to a hundred million dollars to its debit; its purchases of skins was $50,000,000 in excess of its sales, and its foreign buying of woods and woodenware $50,000,000 in excess of its foreign sales.

It is this inability of production of the necessaries of life to meet the demands of consumption that renders Germany's economic problem a serious one in times like the present, when producers are turned consumers and the cannon's waste is substituted for the reaper's saving.

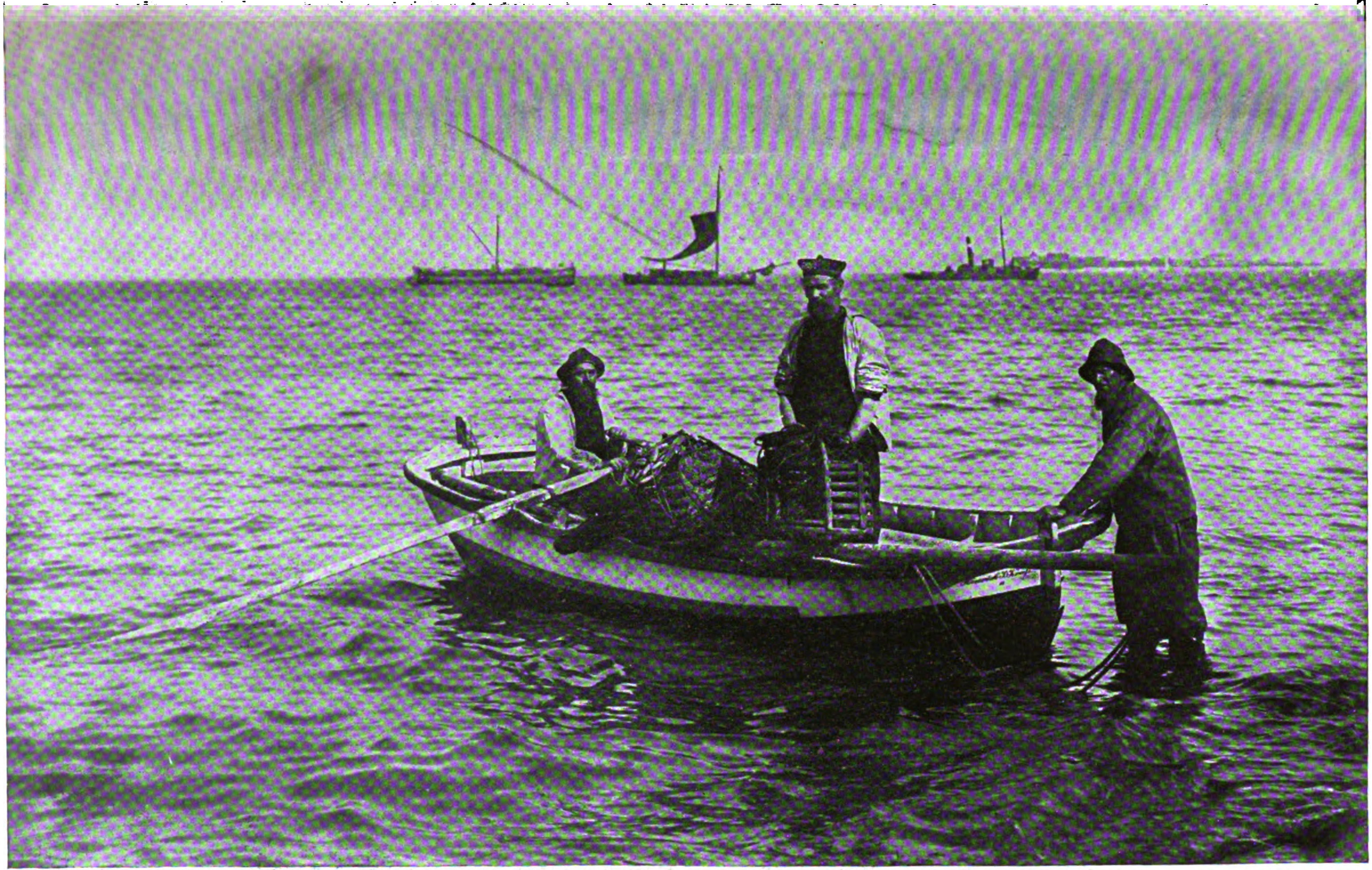
GERMANY'S COMMERCIAL PROGRESS

In the past 25 years no other nation has made such a wonderful bid for foreign trade as Germany. Even the United States did not build up its international business during that period as rapidly. Where our trade increased 275 per cent,



A FOREST OF MASTS: HAMBURG

Hamburg is the most important harbor in Europe and the third largest in the world. The quays stretching along both banks of the Norder-Elbe from Altona to Elbe bridge, a distance of five miles, accommodate 450 sea-going ships, 1,400 river steamboats, and 5,000 barges and small craft. There is a large free harbor district, where freight may be handled without encountering customs duties if it is destined for other than German points. Most visitors to Hamburg are rushing for a steamer and do not tarry long enough to see the beautiful homes, glorious gardens, and lakes thronged with swans, which are affectionately remembered by all who linger.



WITH THE FISHERFOLK: HELIGOLAND

The Island of Heligoland, which guards the mouth of the Elbe, is inhabited by about 3,400 people of Frisian stock, whose principal industries are fishing in the North Sea and catering to the wants of the 30,000 bathers who visit the island during the summer season. The island, which can be seen in the distance, is one mile long and about one-fourth mile wide, and is reported to be heavily fortified.

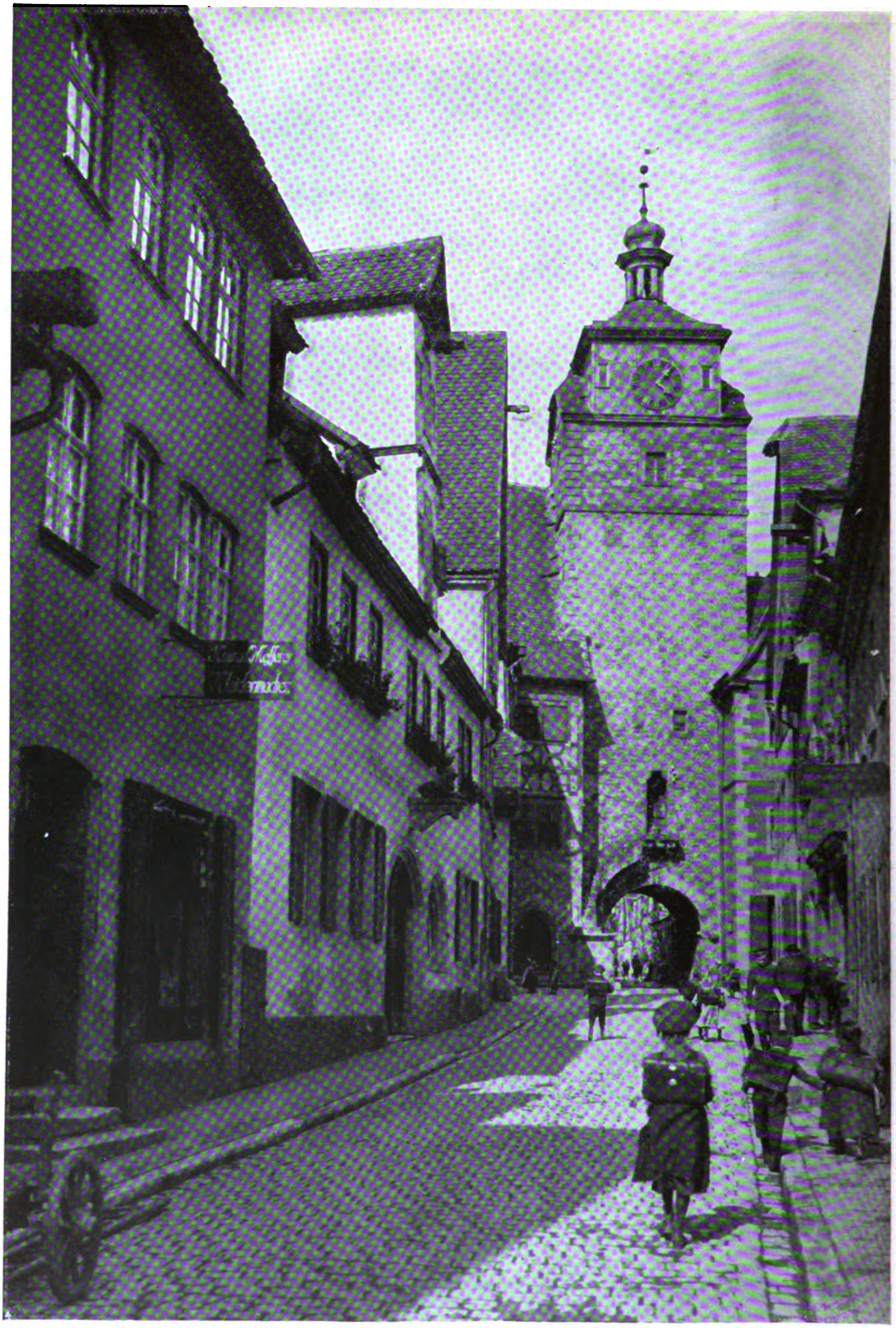
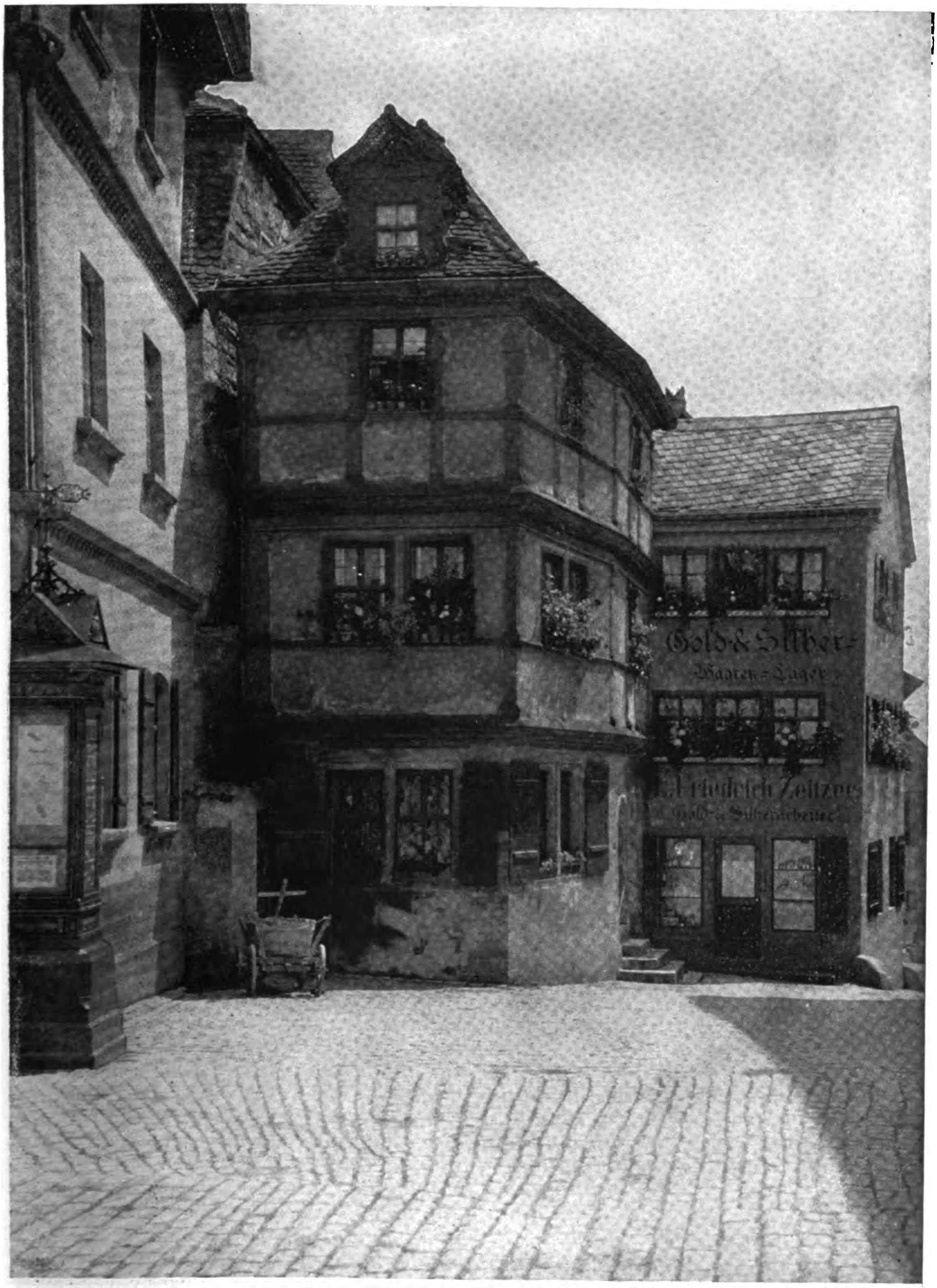


Photo by Emil P. Albrecht

THE WHITE TOWER (WEISSER-TURM) FROM THE INSIDE—A RELIC OF THE 13TH CENTURY WALL: ROTENBURG. NOTE THE SCHOOL CHILDREN


Gold & Silber-
Waaren-Lager
Friedrich Zeltzer
Gold- u. Silberarbeiter

IN OLD ROTENBURG

Photo by Emil P. Albrecht

Every visitor to Germany recalls the bright flowers with which the Germans everywhere adorn their windows. This picture shows a quiet and picturesque corner of old Rotenburg. Germany.

Photo by Emil P. Albrecht

WHEN SCHOOL'S OUT AND A PHOTOGRAPHER IN TOWN: ROTENBURG

"The Germans were the first people to undertake the systematic education of the hand as well as the mind of the child. They began the kindergarten and the technical training school at almost the same time, and Froebel and Pestalozzi, in their work for German education, revolutionized the teaching methods of the world" (see text, page 299).

Germany's increased 300 per cent, while that of Great Britain doubled. Even German agriculture could not keep pace with the great expansion of the Empire's industrial life, and Germany found herself more than ever under the necessity of trading manufactures to the world for food.

The German commercial agent went into the markets of the world to study the wants of the people and to meet those demands. Where the American "drummer" goes abroad to sell our surplus product, he asks the foreigner to buy our models and our patterns; he never thinks that it is necessary to have models and patterns that suit the foreigner. If what he has does not suit the Mexican, why the Mexican is behind time and must change his ideas accordingly.

Not so with the German. If the American wants a Teddy bear, no matter if the German toy maker never before heard of that precocious creature, the American shall have it at the earliest possible moment. If the Mexican is fond of cheap filigree work, no matter if the German jewelry manufacturer never saw the Mexican kind of filigree before, the Mexican shall have it at once. If the Colombian oil-well drillers want a special length, weave, and weight of rope, no

IN THE LAND OF TOYS: GERMANY Photo by Emil P. Albrecht

A goat cart as a plaything was something new in Brunswick, and the small owner was the envy of all the children

matter if no such rope was ever made on a German ropewalk, their demands must be met.

With the German exporter the main thing is to get business from foreign countries. He would no more think of trying to force German styles on his South American customers than he would think of asking his German customers to buy South American styles. We want the world to buy the left-overs of our domestic trade; the German is willing to make things to order for the world.

THE GERMAN ABROAD

There is another element in the success of the German abroad. If you visit Latin-America you will find the German stores very numerous. The owner is usually a native of Germany, who has come out from the Fatherland and has started in a small way. The chances are that he has married some native woman of good caste, has a numerous family, and enjoys a good social as well as business standing among the local population, into the spirit of whose life he enters as if he were "to the manner born."

He straightway becomes the center of a German influence that is as broad in its sweep as the community in which he lives. Not only does he buy his own supplies from the Fatherland, but he has his example copied by the native merchants themselves.

If the German makes a specialty of meeting the tastes and fancies of his foreign customer, and if he establishes his business in other parts of the world through marriage and its attendant relationships, he holds it by knowing how to meet both credit and shipping conditions. The German who marries in a foreign community becomes a Dun or a Bradstreet to the home exporters, and they are safe in extending long credits on these reports—and in many parts of the world, especially in Latin-America, the long credit is the first essential of business.

When it comes to meeting shipping conditions the German is ready to pack his goods so that they will not break in transit, even with the roughest handling; the American packs his goods so that they will not break if they are handled with care. One may stand by the rail of a West Coast steamer and watch goods go out of the hold and into lighters, and spot the German goods every time. There are no labels "Handle with Care" on them, for the exporter knows that the Latin-American cargo handler would not pay any attention to it even if it were there and he could read it. This cargo handler can give pointers to the American baggage smasher; for he never lets things fall into the lighter—he throws them down. Pieces of American-packed machinery are frequently broken that must take six weeks or two months to replace.

Germany's success as an export nation has been due mainly to three things—making what the world wants, giving its foreign buyers the credit they demand, and packing their goods properly.

GERMAN TRADE IN GERMAN BOTTOMS

The expanding German trade called for a German merchant marine, and, being called for, it was not long in coming. On January 1, 1913, there were 4,850 ships, having a cargo-carrying capacity of 3,153,000 tons net register, flying the German flag. They carried 78,000 sailors. It costs about 10 cents a net register ton a day to keep a ship on the sea, so that Germany's daily outlay for her merchant marine, before the war, approximated a third of a million dollars.

Germany did not limit its commercial activities only to countries that could be reached by a merchant marine, but financed the building of railroads into Asia which reached to the very borders of India, and through which it sought a shorter route to the heart of the East than either the sea route to India or the Russian Transcontinental Railroad through Siberia. The Bagdad Railroad is German-Arabian, and the whole history of transportation indicates that this new German activity pointed to the ascendency of German influence in Southwestern Asia. The Shantung Railway in China was probably the ultimate outlet to which the Germans proposed to connect the Bagdad road.

THE RAILROAD SITUATION

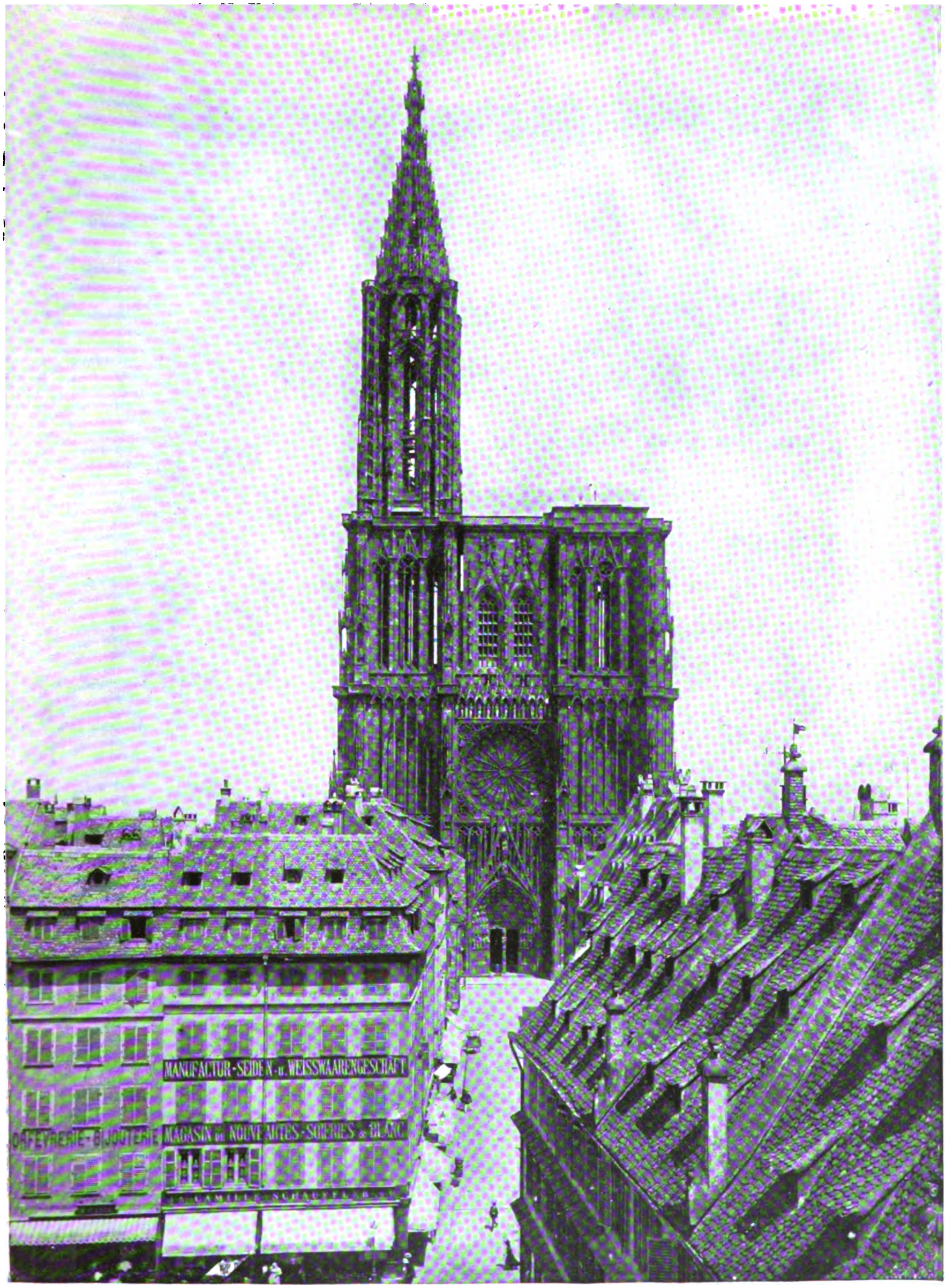
In Germany the railroads are nearly all State-owned, and they were laid out with their military use as the first consideration. A small town that might need a tiny little tiled-roof station, with a single side track, in France or the United States, may have in Germany a great station, with a dozen sidings, and facilities for entraining or detraining hundreds of people for every one who uses it in normal times of peace. Everything has been planned with an eye to the quick handling of the men and the munitions of war.

The German view of rebates and discriminations in railroad rates has been diametrically opposite to our view. The small shipper always is required to pay a higher freight rate than the big shipper; the domestic shipper must pay a higher rate than the export shipper. The Austro-Hungarian shipper gets a lower rate on trans-Germany shipments than the German shipper. When the toy makers of Nuremberg want to assist the Hamburg Kris Kringle the rate is $9.33 per ton between the two cities; but when they want to assist the American Santa Claus, via Hamburg, the rate is $5.83 per ton, although the two consignments may move in the same car from Nuremberg to Hamburg.

Likewise, the rate on cloth from Cologne to Hamburg is $6.38 per ton when it is for domestic consumption; when it is for export the rate is $3.64 per ton.

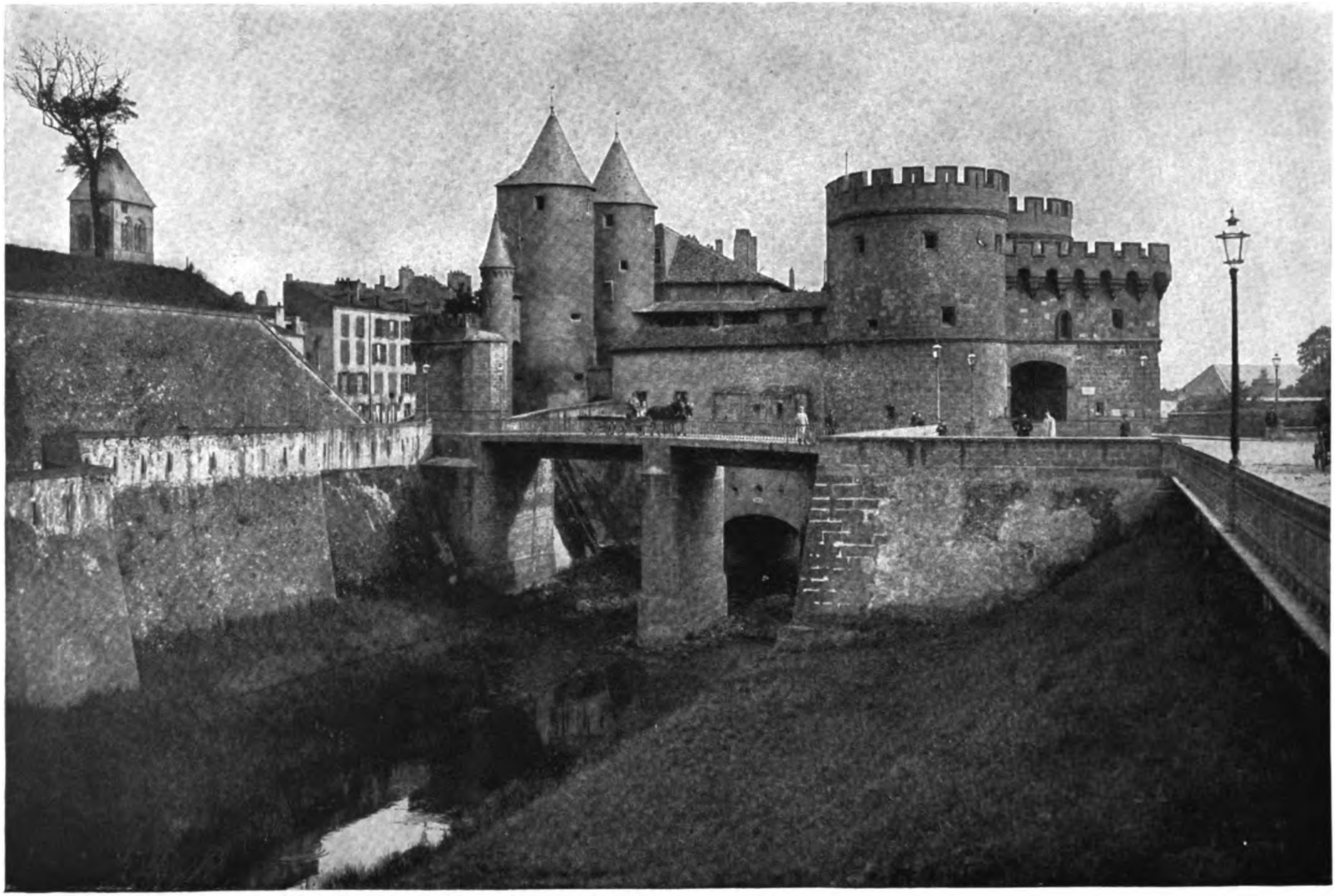
BUSINESS AND BATTLESHIPS

"Germany is no longer the land of thinkers and poets—it is a nation of business and battleships," declared one of the aged German writers in commenting upon the transition of his country from the days of Gœthes, its Schillers, its Schopen-


MANUFACTUR-SEIDEN-u. WEISSWAARENGESCHÄFT
ORFEVRERIE-BIJOUTERIE
MAGASIN DE NOUVEAUTÉS-SOIERIES & BLANC

THE STRASSBURG CATHEDRAL

The façade, the most admired part of the structure, presents a singularly happy union of the northern France and the German styles of cathedral architecture. The large rose window seen in the picture is 42 feet in diameter. A large astronomical clock in the transept is a matter of wonderment to the beholder. An angel strikes a bell for the quarter-hours; a genius reverses his hour-glass every hour; a symbolic deity steps out of his niche each day—Apollo on Sunday, Diana on Monday, and so on; each day at noon the Twelve Apostles march around the figure of the Saviour, while in the morning a cock on the highest pinnacle stretches his neck, flaps his wings, and crows. The present building was begun in 1179.



ONE OF THE OLD FORTS AT METZ, GERMANY

This fort guards the entrance into the city across the Seille River. The real stronghold of the fort is not in the buildings seen in the picture, for they would not stand heavy artillery fire an hour; it is in the pits of the disappearing guns, not in evidence.

hauers to those of the present. And so it is. The German Krupps have armed the nations; the German Ballins have furnished ship bottoms for the world; the German Guinners have made their influence felt wherever financiers gather; the German Borsigs have built the locomotives the sound of whose whistles have echoed over the graves of Israel and Ishmael; the German electrical machinery has harnessed the rivers of Asia, Africa and South America.

As for battleships, the Kaiser long ago announced his humiliation at not having what he thought an adequate navy. In a speech at Bremen in 1903 he said that in his boyhood he had been angered and chagrined at the pitiful weakness of the German navy. He announced that while it was not his intention to have a navy for aggression, he wanted one that would command the respect of the world. "I want to do everything possible to let bayonets and cannon rest; but at the same time to keep our bayonets sharp and cannon ready, so that envy and grief shall not disturb us in tending our garden or building our beautiful house."

Six years before, the Kaiser had made another speech in which he declared: "Neptune with the Trident is the symbol for us that we now have new tasks to fulfill, since the Empire has been welded together. Everywhere there are German citizens to protect, everywhere German honor to maintain: That Trident must be in our fist."

BEGINNING THE GERMAN NAVY

The present German navy, second only to that of Great Britain, dates from the Jameson Raid, in South Africa. President Kruger sent the Kaiser a telegram after that incident, who responded with a message of sympathy that was taken by Great Britain as a sort of threat. She made ready for eventualities, and in 1900 Germany responded with a naval bill whose preamble laid it down as Germany's intention to build a fleet of such strength that "a war with the mightiest naval power would involve risks threatening the supremacy of that power." That preamble served as notice to England that her position as mistress of the seas was to be questioned after that date, and the greatest armament-building race of the ages was on.

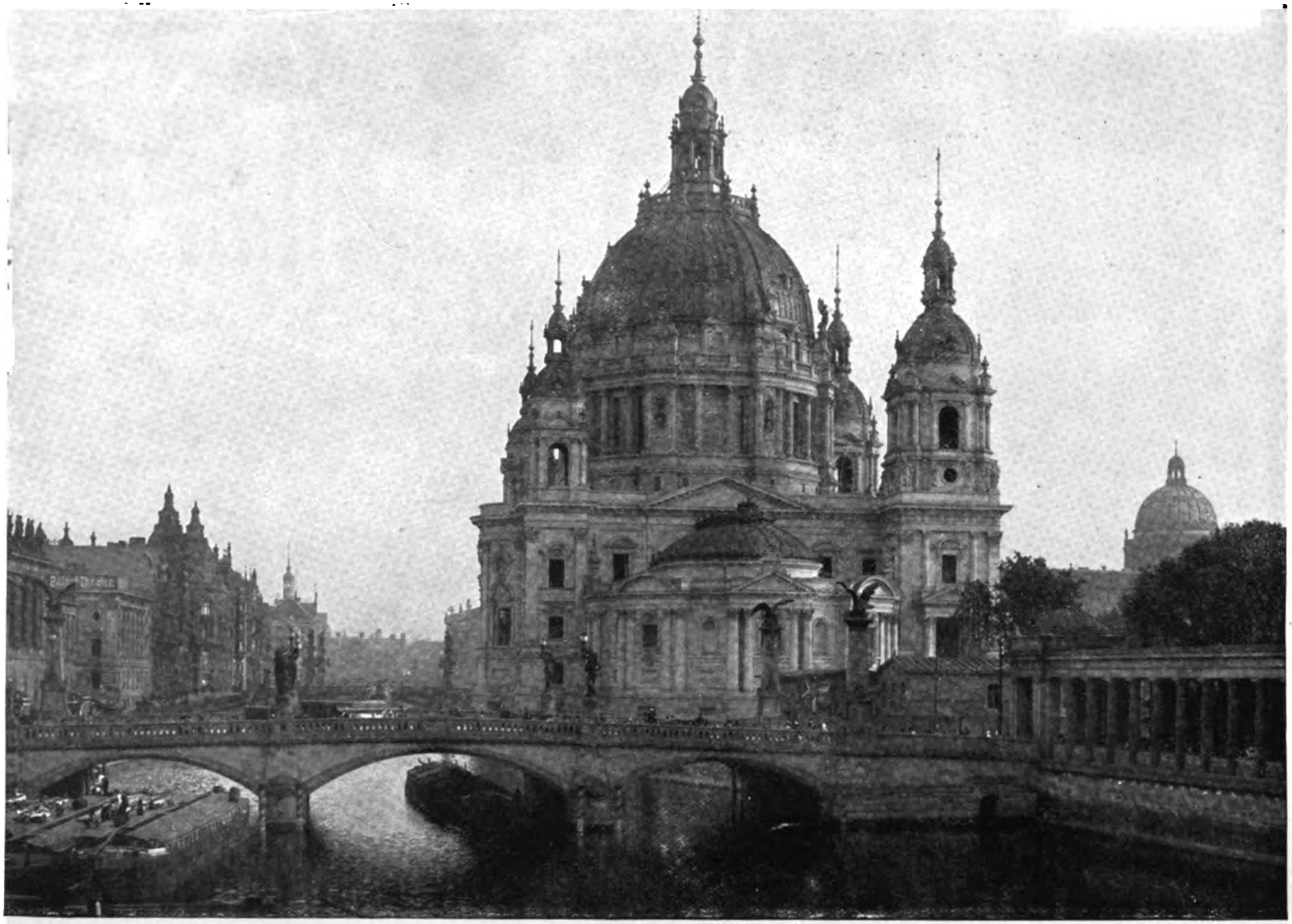
No stone has been left unturned to make the German navy powerful and efficient, especially in defense. The Germans have evolved a collapsible periscope for their submarines, something, it is stated, no other navy possesses. They have designed their Zeppelins for co-operation with their dreadnoughts, arming them with heavy-caliber, rapid-fire guns, both above and below the gasbags, mounted so that they can cover every possible means of approach—fore, aft, broadside, from above, or below. The cruising radius of the Zeppelins is said to be 2,400 miles, and their operating height 12,000 feet, which is beyond the range of any surface guns.

GERMAN LIVING CONDITIONS

The people of German cities live amid different conditions than those of American cities. In Berlin it is forbidden to water flowers except between the hours of 4 and 5 o'clock in the morning; no one can play a piano before 7 in the morning or after 9 at night; no bedding may be aired out of a front window; singing, shouting or whistling is not tolerated on the streets; the dwellers in apartment-houses are forbidden to bathe at night; no one is allowed to take a street car that is full to its seating capacity; no pedestrian shall obstruct a carriage or an automobile; one cannot employ a servant without the aid of the police, or change his residence without their consent; he cannot take the cab that strikes his fancy, but the one the police tell him to take. There are walks sacred to pedestrians, streets dedicated to roller skaters, speedways where only automobiles may go.

NATIVES WELL SATISFIED

Although the long list of "forbidden" things in German cities gets onto the nerves of Americans, the Germans like them. They say that only unreasonable things are forbidden and that all such things should not be allowed—their clothes will not be made wet by the water from upstairs window boxes; their morning nap will not be disturbed by street



THE CATHEDRAL IN BERLIN

Berlin has been a city for many generations, but today it is almost as new as if it had arisen on our western prairie. No other city in Europe has grown so rapidly in the last 40 years, and, with its suburbs, it has a population today of more than three and a half million. The growth of New York and Chicago has been wonderful, but not more so than that of the capital on the Spree. It is the largest city in the world built on a definite plan. Its broad streets and its magnificent driveways; its splendid churches, of which the cathedral is the dominant example; its handsome residences, and its well-designed business buildings combine to give it a charming aspect that compensates for its newness.

noises; no thumping piano will keep them awake at night; they will get seats when they enter a street car. They simply prefer to subordinate their passing whims to their permanent comfort.

No domestic servant can get a position except through the police. She must make a formal application at the municipal registry office, where comes the housewife wanting a cook. The police give her a little book setting forth her name, where she was born and when, her stature, the color of her eyes and hair, and the date she first went into domestic service. It also gives the name, occupation, social rank, and residence of each former employer, and the reason for her leaving each household, written in by the mistress thereof, which is authenticated by the stamp of the police.

After the cook is hired her mistress must register the fact and the term of employment with the police, giving them the number of the cook's record book, while the cook must take her book back to the police for her new employment to be written into it. Every Monday the mistress must affix a 5-cent insurance stamp to the card the cook is required to have, and once a month the postoffice cancels these stamps. This must be attended to regularly or the police will inquire why. That proceeding insures the cook that if she lives to be 70, thereafter she will get a pension of from $3 to $5 a month. If she marries in the meantime she may have her insurance with interest refunded, or keep it up, as she pleases.

Neither mistress nor maid complains about these restrictions and this red tape. The mistress says she is sure of getting a good servant and the maid says she is sure of good treatment by her mistress.

MANY CLASS DISTINCTIONS

No western country has more class distinctions than Germany. Every person above the rank of manual laborer has a handle of some kind to his name which enables even the stranger to determine his standing. When a traveler goes to a hotel or lodging-house, he must give his name, home address, and standing, both as to occupation and social position. The women are even more particular than the men as to nice social distinctions. The wife claims as her own the full title of her lord and master. If she be the wife of a captain in the army, she is Mrs. Captain So and So; if her husband is a postal clerk, she is addressed as Mrs. Director of Posts So and So; if her husband has become postmaster, she will be Mrs. Upper Director of Posts So and So.

These titles and social distinctions that go with them are not confined to the army and the civil service. A man who has a great electrical factory may be known as a royal, privy, commercial, councillor, electrical, appliance, factory proprietor.

Salaries in the German army are extremely low; a German general may not get as much as a second lieutenant in the American army. But there is no German tradesman who will not give almost unlimited credit to the German army officer. He occupies the first social position in the Empire, and every wealthy father and ambitious mother will only be too glad to pay his debts if he will but wed their daughter.

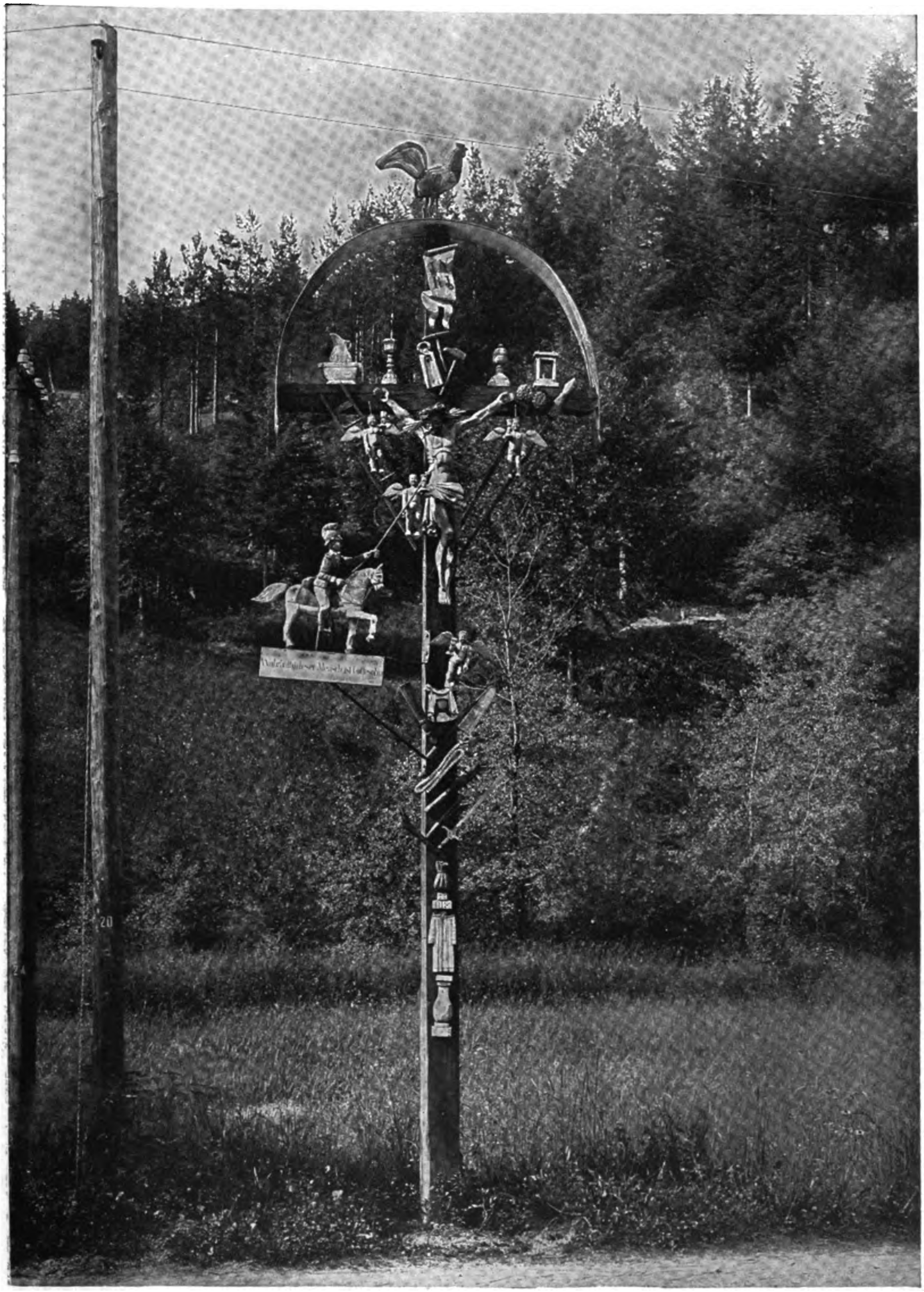
The dowry is never lost sight of from the highest home to the humblest, and even the servant girl will scale down her pleasures to the lowest in order to increase the dowry, which adds to her chances of marriage.

THE GERMAN BUSINESS MAN

The German business man is different from the business men of many other countries. He brings to his work an equipment of technical training discipline, orderliness, and unflagging industry seldom equaled. He rises at six in the morning, has a simple breakfast of coffee and rolls, and is at his office or factory never later than 8 o'clock. He takes a sandwich along in his pocket, and eats it as a second breakfast, usually between 10 and 11. At 1 o'clock, if he is a family man, he goes home to his dinner, which he eats leisurely, and then takes a short nap. After this comes his coffee and cigar, and after these his return to his office, where he arrives by 3 o'clock, and stays until his work is done, even though that be 8 or 9 o'clock.

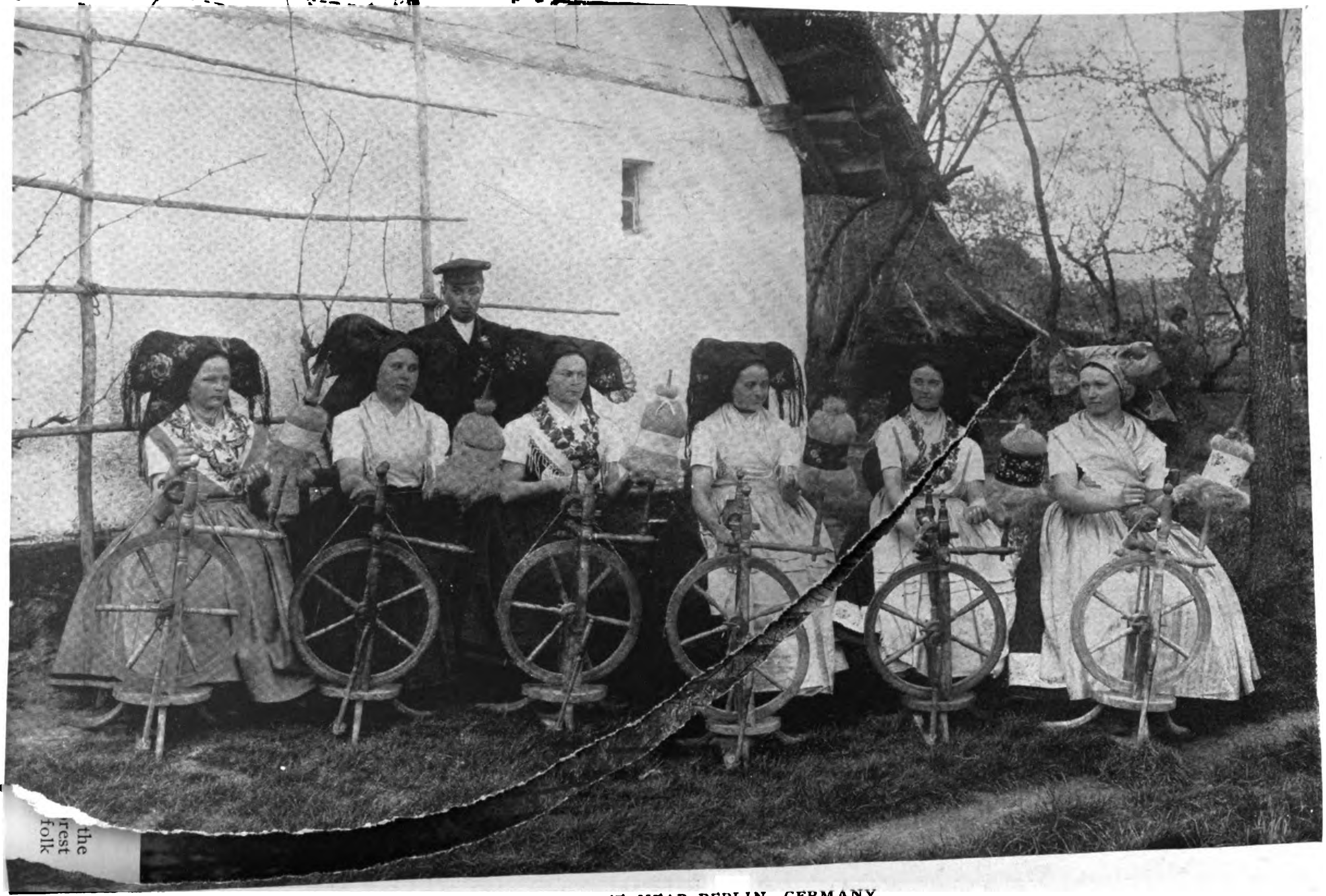
THE BLACK FOREST REGION

There is no more diversified scenery anywhere to be found than in the region of the Black Forest, where such views as this delight the eye of every tourist. The Black Forest has given the world many beautiful legends, weird superstitions, curious stories, and folk tales. The Rhine bounds it on the south and west.



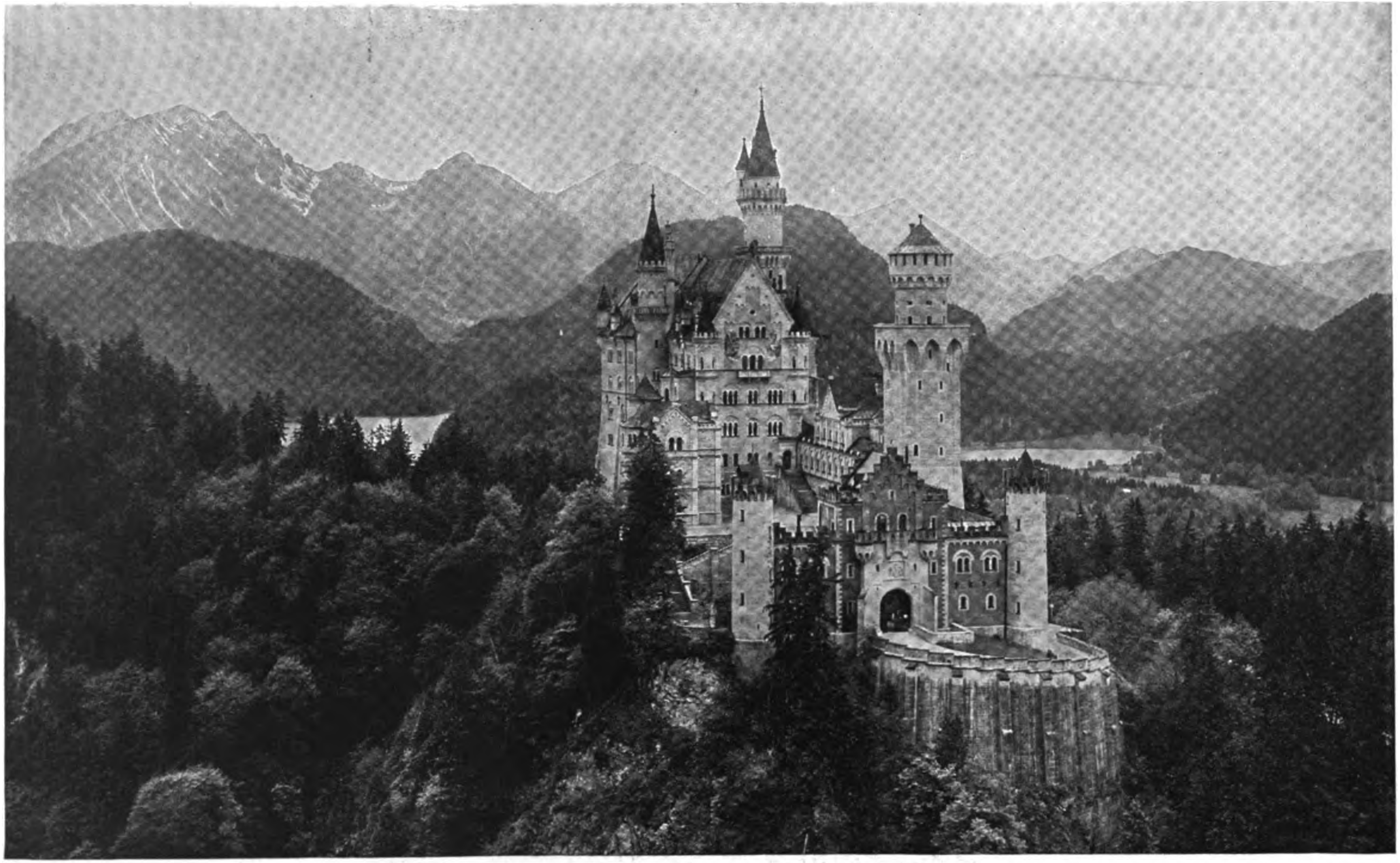
WAYSIDE CROSS IN THE BLACK FOREST

The people in the Black Forest region, especially those in Baden, are deeply religious, and one comes upon wayside crosses of striking design in most unexpected places

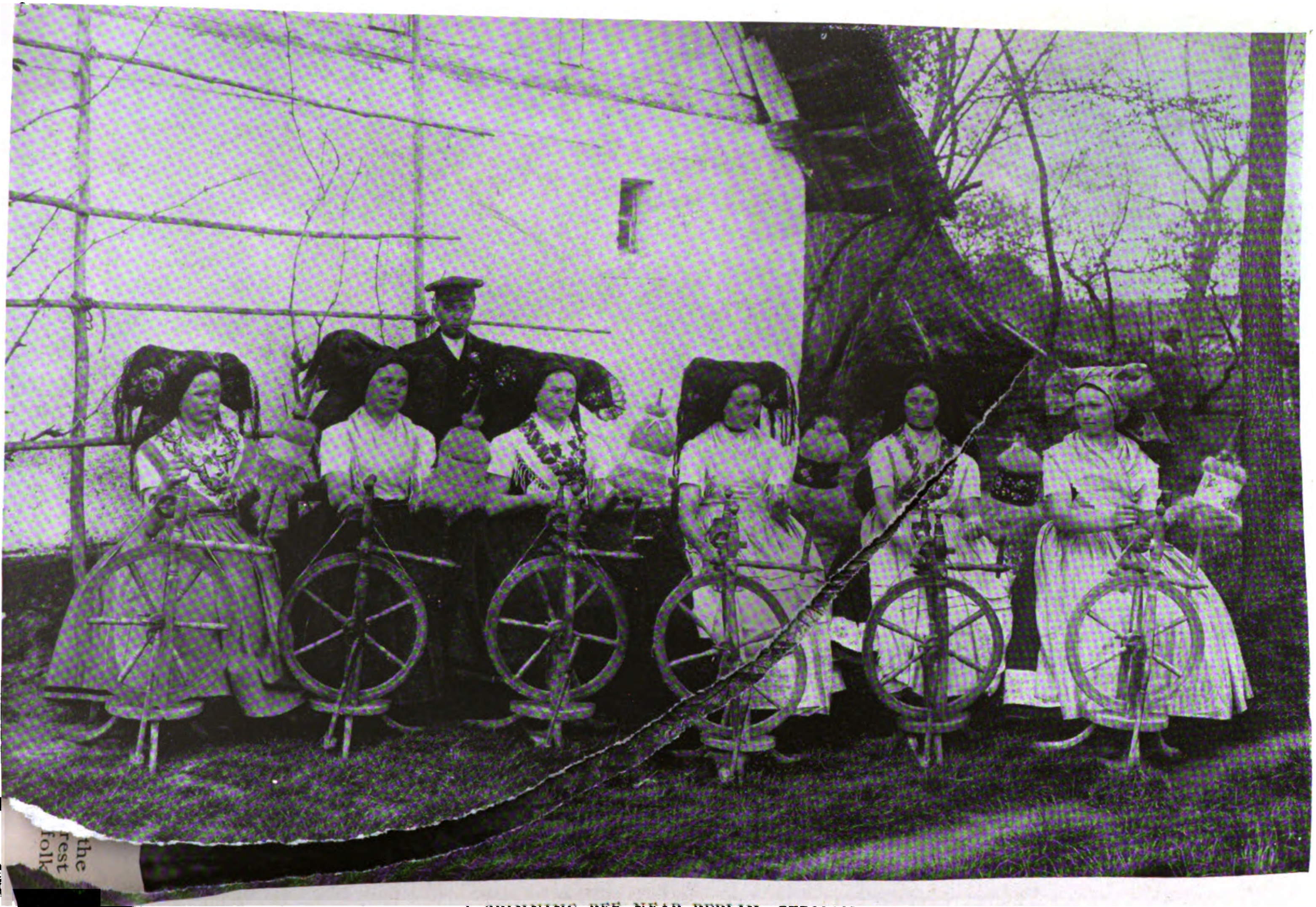


A SPINNING BEE NEAR BERLIN, GERMANY

The simple life led by all Americans a half century ago and still led in many farming communities, where "quilting bees," "barn raisings," and the like still take place, is to be found throughout rural Germany, where the women take pride in their mastery of the domestic arts

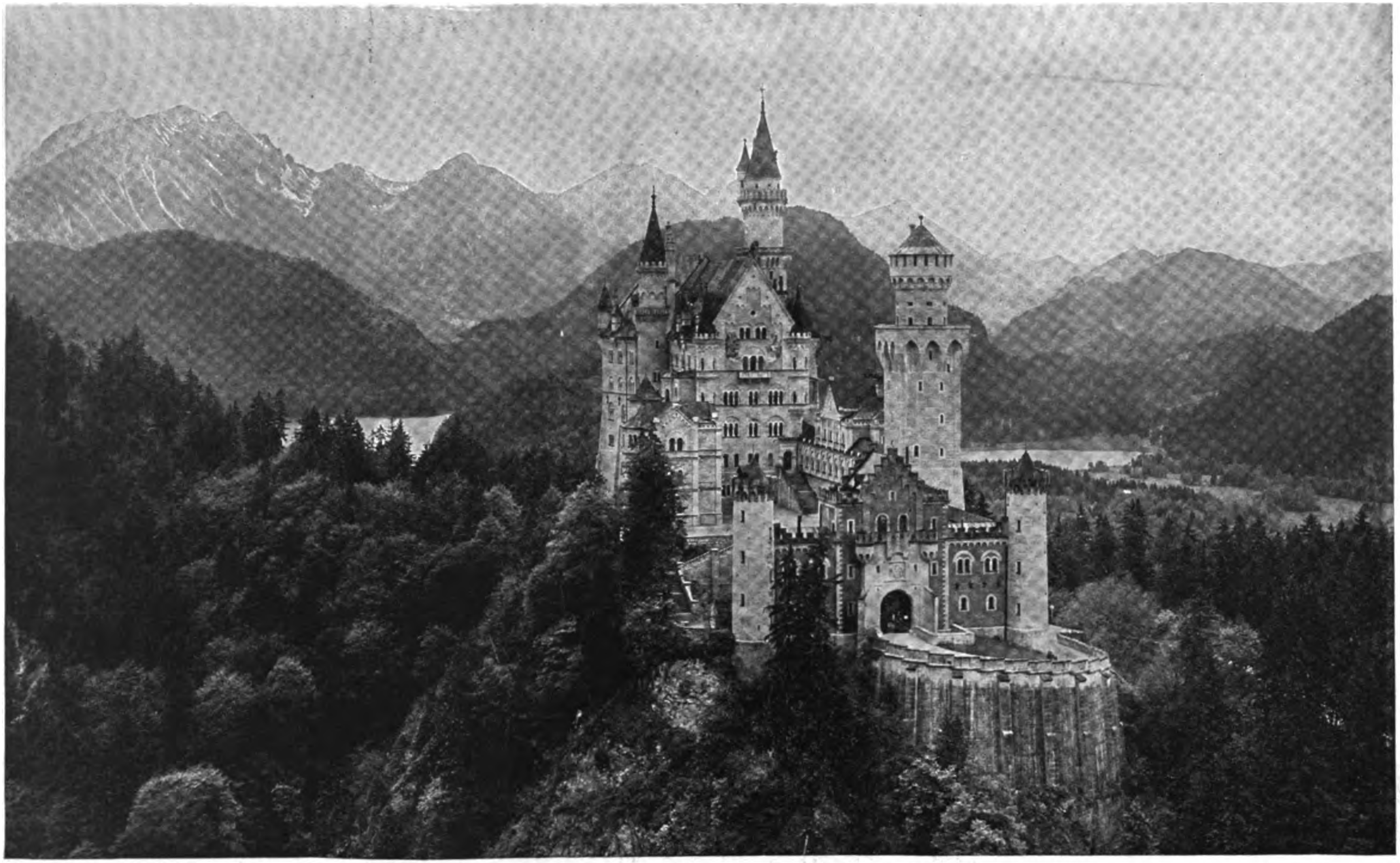


SCHLOSS NEUSCHWANSTEIN—A TYPICAL CASTLE OF THE GERMAN MOUNTAIN REGION, BEAUTIFUL ALIKE FOR SITUATION AND ARCHITECTURE: GERMANY

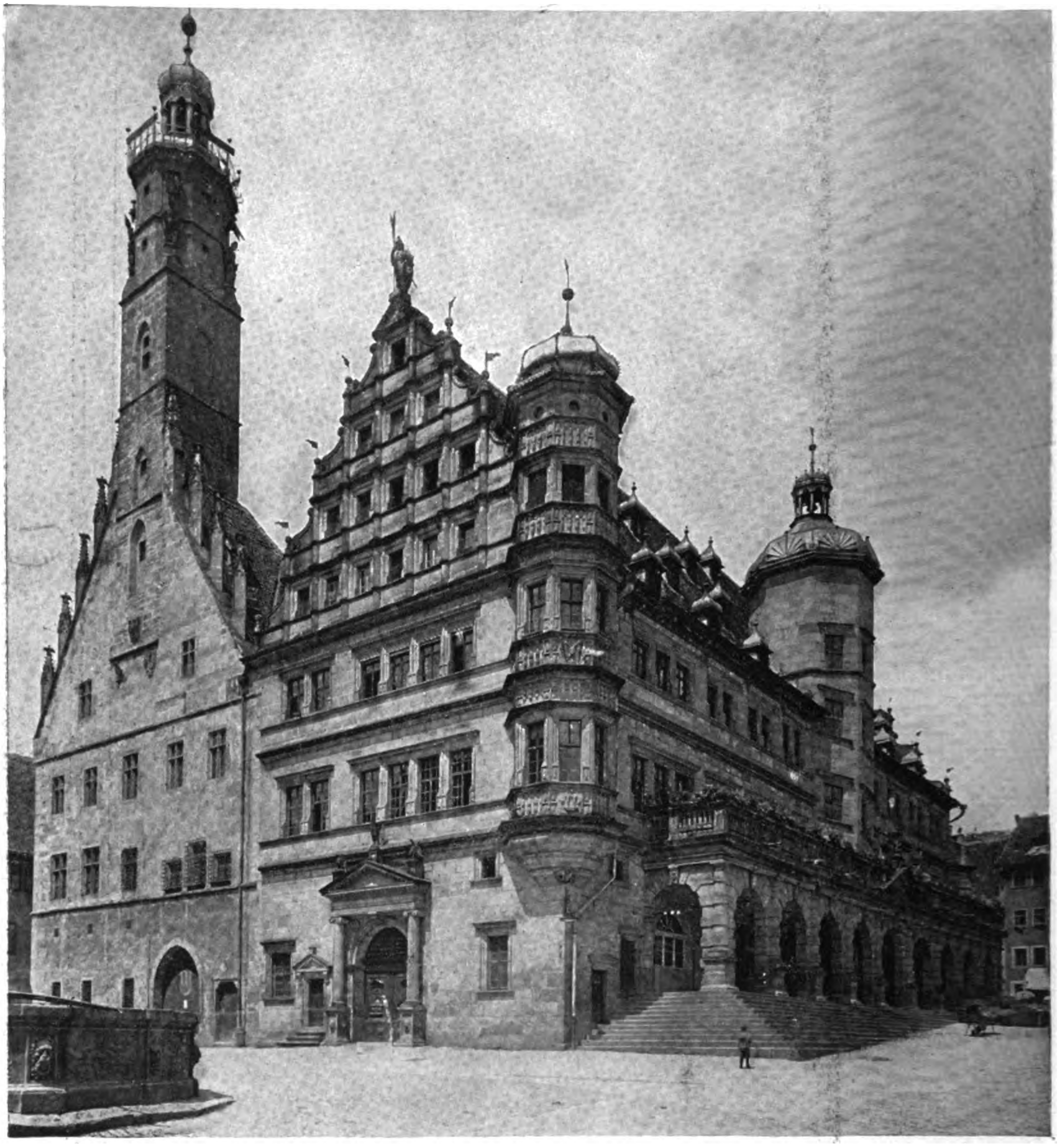


A SPINNING BEE NEAR BERLIN, GERMANY

The simple life led by all Americans a half century ago and still led in many farming communities, where "quilting bees," "barn raisings," and the like still take place, is to be found throughout rural Germany, where the women take pride in their mastery of the domestic arts



SCHLOSS NEUSCHWANSTEIN—A TYPICAL CASTLE OF THE GERMAN MOUNTAIN REGION, BEAUTIFUL ALIKE FOR SITUATION AND ARCHITECTURE: GERMANY



THE TOWN HALL IN ROTENBURG, GERMANY

One part of this old Bavarian building dates from the thirteenth century and the other from the sixteenth. The latter is a beautiful Renaissance structure, with a magnificent façade and a delicate spire. It contains a fine assembly-room, where, every Whit Monday, a play is performed commemorating the capture of the town by Tilly, in 1631.

There are many peculiar ways that German business men have when dealing with people at home, however ready they are to accommodate themselves to foreign conditions when they deal abroad. A German house paying a bill by check will always deduct the stamp it costs to mail the check. If a "postage due" letter comes, he will let it go back for prepayment, even though it may contain a check or an order; "it is the custom."

THE WAGE-EARNERS

It is generally agreed that the German working class have fewer amusements, less leisure, and a smaller amount of money to spend for either entertainment or living expenses than the same class in

THE SERVANT GIRLS OF GERMANY Photo by Emil P. Albrecht

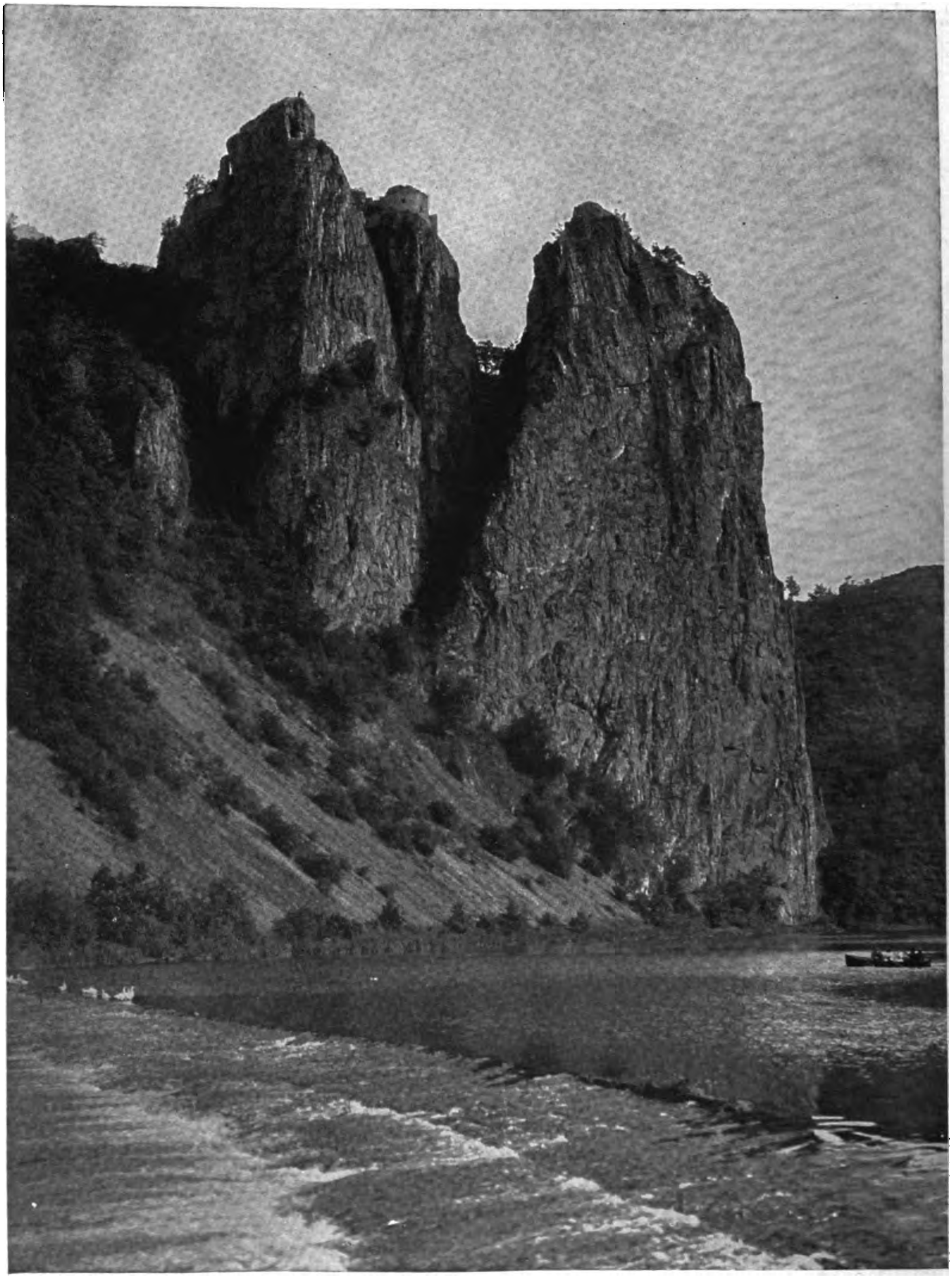
There is no lack of servant girls in Germany, even though their wages are but a pittance, measured by those paid in the United States. They are a happy, contented lot, saving up their wages for the dowry that usually brings a husband.

England and America, but for all this they seem contented and happy. Dancing seems to be the characteristic amusement of the working people.

Bismarck once said that every healthy, able-bodied man has a right to say to the State that it shall give him work. And that idea has been developed to such an extent that in 1912 there were fewer than 2 per cent of the wage-earners of Germany out of employment. In England and the United States the unemployed ranges around 10 per cent.

The employer of labor is required to maintain working appliances, machinery, and tools in such a way as to protect the operators from danger to life and health, and must give them good light, proper space, and sufficient ventilation. Broad gangways must be provided, which must be kept clear, and sanitary washing and dressing accommodations are required in every factory. There are also dining-rooms where the workmen may have their food heated, and many of these have libraries, pianos, and assembly-rooms.

Inspection by the police takes place every day, and the slightest infraction of



A PICTURESQUE CLIFF OF PORPHYRY, NEAR METZ

The Rhine rises in southern Switzerland and flows in a general northwest direction through western Germany and Holland to the North Sea. Commercially it is probably the most important river of Europe, its valley being densely populated with numerous industrial cities. Canals connect the Rhine with the Danube, the Meuse, and other important rivers. Some of the principal towns through which it passes are Basel, Strassburg, Worms, Mayence, Coblenz, Cologne, and Dusseldorf.

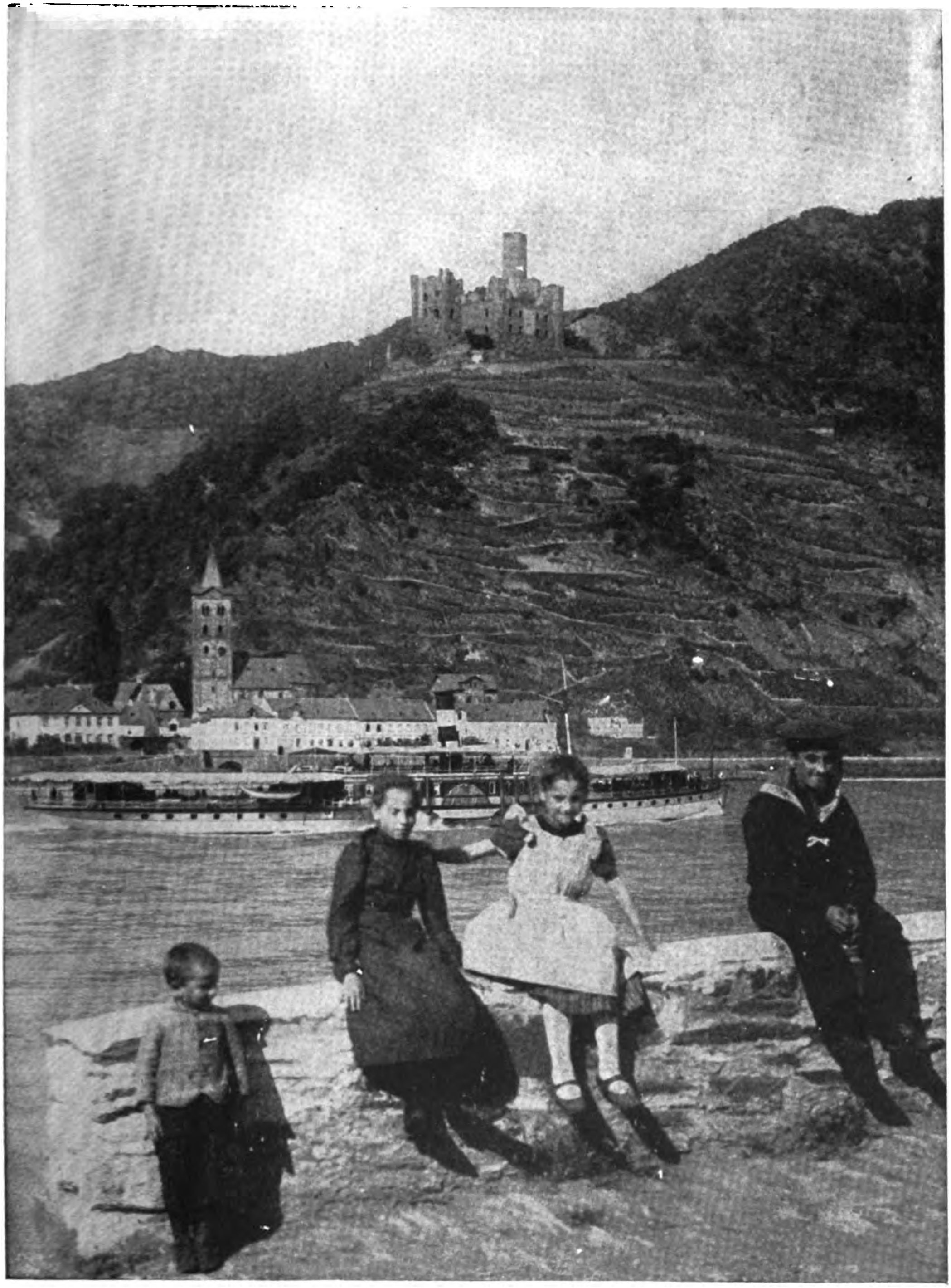


Photo and copyright by Underwood & Underwood

CASTLE TAHNECK, ON THE RHINE: A TYPICAL VIEW ALONG THE HISTORIC RIVER

There is probably no more popular or instructive day trip for tourists in Europe than that down the Rhine on one of the excursion steamers. The ancient castles, relics of medieval barbarism, the terraced vineyards, the wooded slopes and green meadows, and the busy towns form one of the most charming and varied panoramas of the Old World.

WATER TRANSPORTATION IN GERMANY

Few countries in the world compare with Germany in the number of its canals and canalized rivers. Its rivers are joined together by canals as our railroads are joined together by connecting links, and it is possible to travel thousands of miles by water instead of rail the factory law will be reported and dealt with. Each week the employer must pay into the public treasury a small fraction of each employee's wage, to guarantee their old-age pensions. No employer can discharge an employee without good cause, and every disagreement between them goes into the industrial courts—the government does not permit the settlement of such disagreements outside of these courts, however willing both parties might be to compromise.

INSURANCE AND SAVINGS

The Germans have an obligatory insurance law for workingmen, in which each employer must establish a fund, to which he contributes one-third and his employees two-thirds, at the rate of 3½ per cent of the wages earned. The benefits are half wages for sick employees up to 26 weeks, including medical attendance, drugs, and free hospital service. The plan includes a provision for funeral expenses, and for widows and orphans.

There is also a compulsory savings bank for working people. Married men must deposit 5 per cent of their wages, and unmarried ones 10 per cent, unless they have dependents, in which case the rate is the same as for married men. These deposits increase until they reach $500, after which the depositor may continue to save or not, as he chooses. But he can use the $500 only for buying a house or furnishing a home. Six per cent interest is paid on these deposits.

EDUCATION COMPULSORY

Education is compulsory throughout Germany, from the age of 6 to 14. There were more than 10,000,000 children in school last year, which is about the same proportion to population that we have in similar schools in the United States. When King Frederick William took over the helm of the Prussian ship of state he declared that "the future will belong to the best educated nation," and education in books was only the beginning of the general education in life that the king had in mind.

The Germans were the first people to undertake the systematic education of the hand as well as the mind of the child. They began the kindergarten and the technical training school at almost the same time, and Froebel and Pestalozzi, in their work for German education, revolutionized the teaching methods of the world.

Every German is educated for the particular work in life that has been chosen for him. There is no drifting into a trade or profession—becoming a machinist through the sweeping-out-shop route, or a pharmacist through the soda-fountain route. Each child has his career selected for him, and when his training is finished he is fitted for no other.

Progressive parents send their children to kindergarten at four and five; at six if they are not there the State asks why. At the beginning the week is divided into 11 hours for German, four hours for arithmetic, one hour for singing, and four hours for religion. In the middle grade the week is divided into 10 hours for German, four hours for mathematics, one hour for drawing, six hours for science, two hours for singing, two hours for handiwork and gymnastics, and five hours for religion.

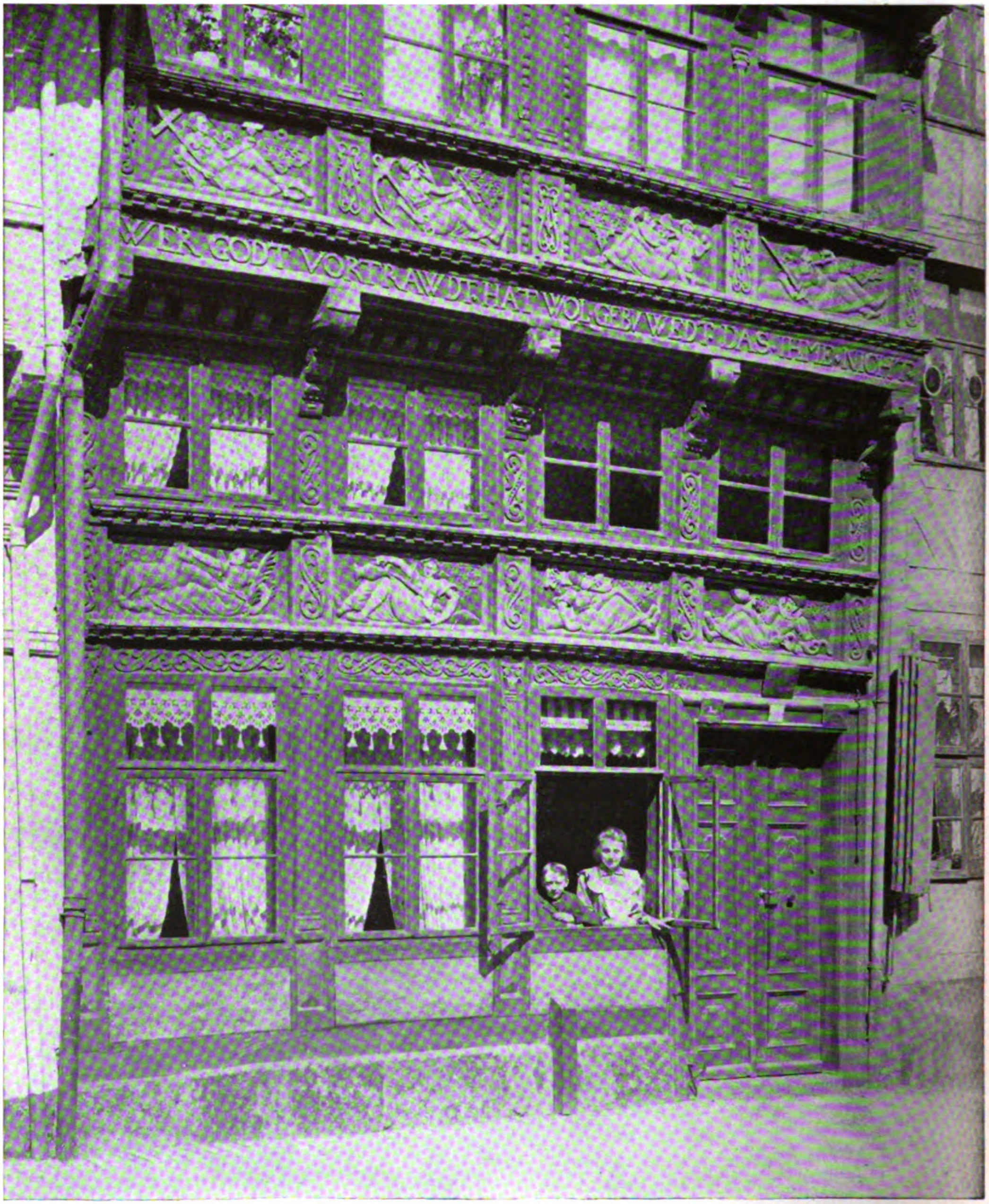
No other nation possesses so many fine technical schools. In the rural districts there are the agricultural schools for the farmers' boys, and the great crop yields of Germany answer for their efficiency.

The Empire has 21 universities, with a total enrollment of 55,000, more than half of whom are in the schools of philosophy.

NATIONAL THRIFT

The one particular battle which the Kaiser has had with his people has been to keep them, with their growing wealth, from forgetting the Spartan simplicity of the older days. The love of ease and luxury is a trait into which the government has ever urged the people not to fall. It is said that the great field marshal, Von Moltke, kept his household expenses down to $75 a month, and that if that sum were exhausted the household went hungry. He is described as having been very economical in the use of candles.

For a long time officers' messes in the army vied with each other in giving the


WER GODT VORTRAWDT HAT WOLGEBAWEDT DAS IHME NICHT

AN OLD HOUSE IN HILDESHEIM, GERMANY

On the buildings of this ancient town may be observed traces of the obstinate resistance of Gothic architecture to modern. The richly decorated façades, executed by wood-carvers and sculptors, bear testimony to the taste, humor, and enterprise of the burghers of three centuries ago.

Photo and copyright by Underwood & Underwood

EISENACH, GERMANY, WHERE LUTHER AND BACH WERE BORN

A quaint town, with long-ago houses and a picturesque canal. Martin Luther, as a schoolboy, sang upon its streets to earn his supper, and Johann Sebastian Bach improvised airs, while strolling along its canal, that were the forerunners of some of the finest musical compositions the world possesses.

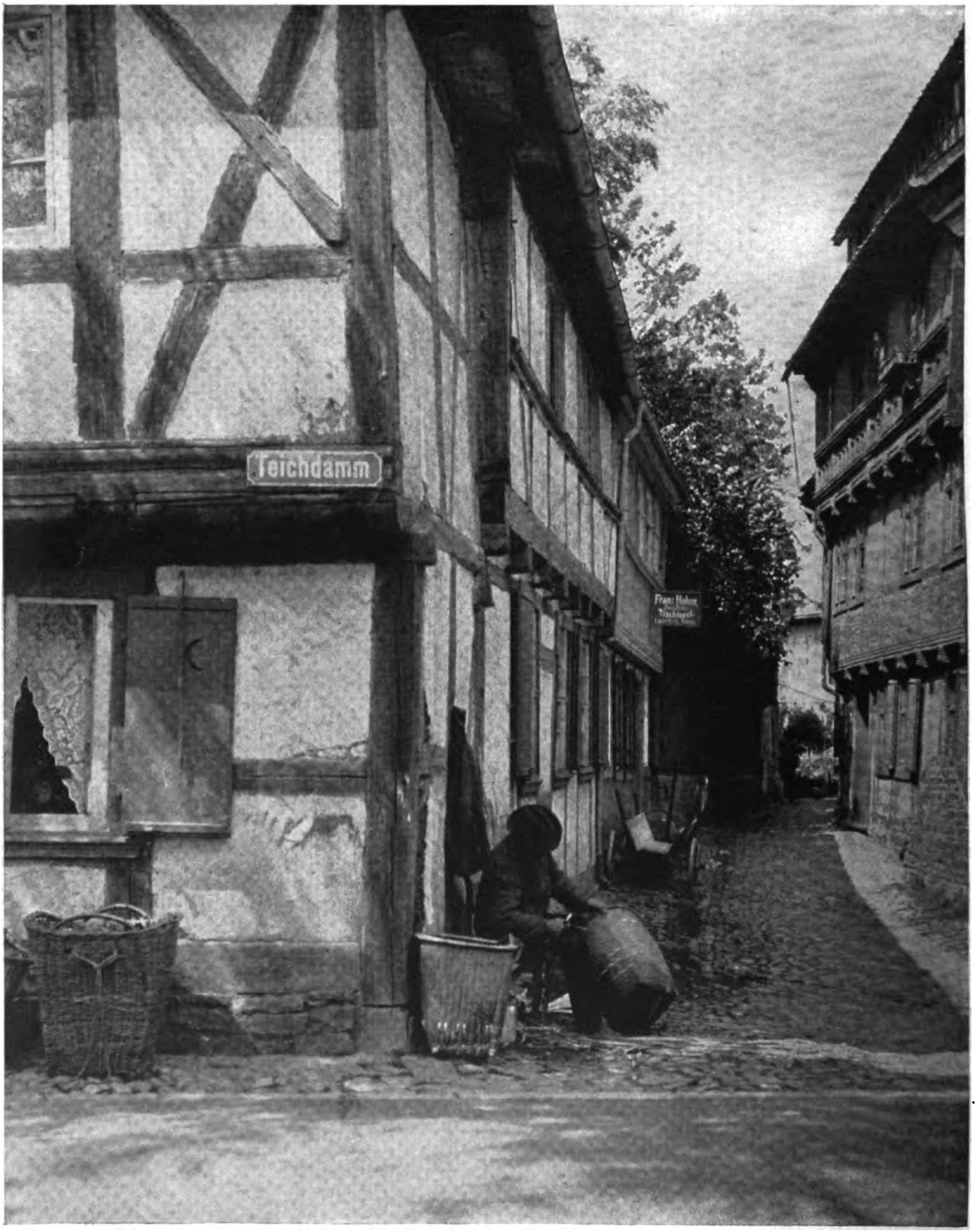


Photo by Emil P. Albrecht

A BASKET-MAKER REPAIRING A "KIEPE": WERNIGERODE, PRUSSIA

"Bismarck once said that every healthy, able-bodied man has a right to say to the State that it shall give him work; and that idea has been developed to such an extent that in 1912 there were fewer than 2 per cent of the wage-earners of Germany out of employment" (see text, page 295).

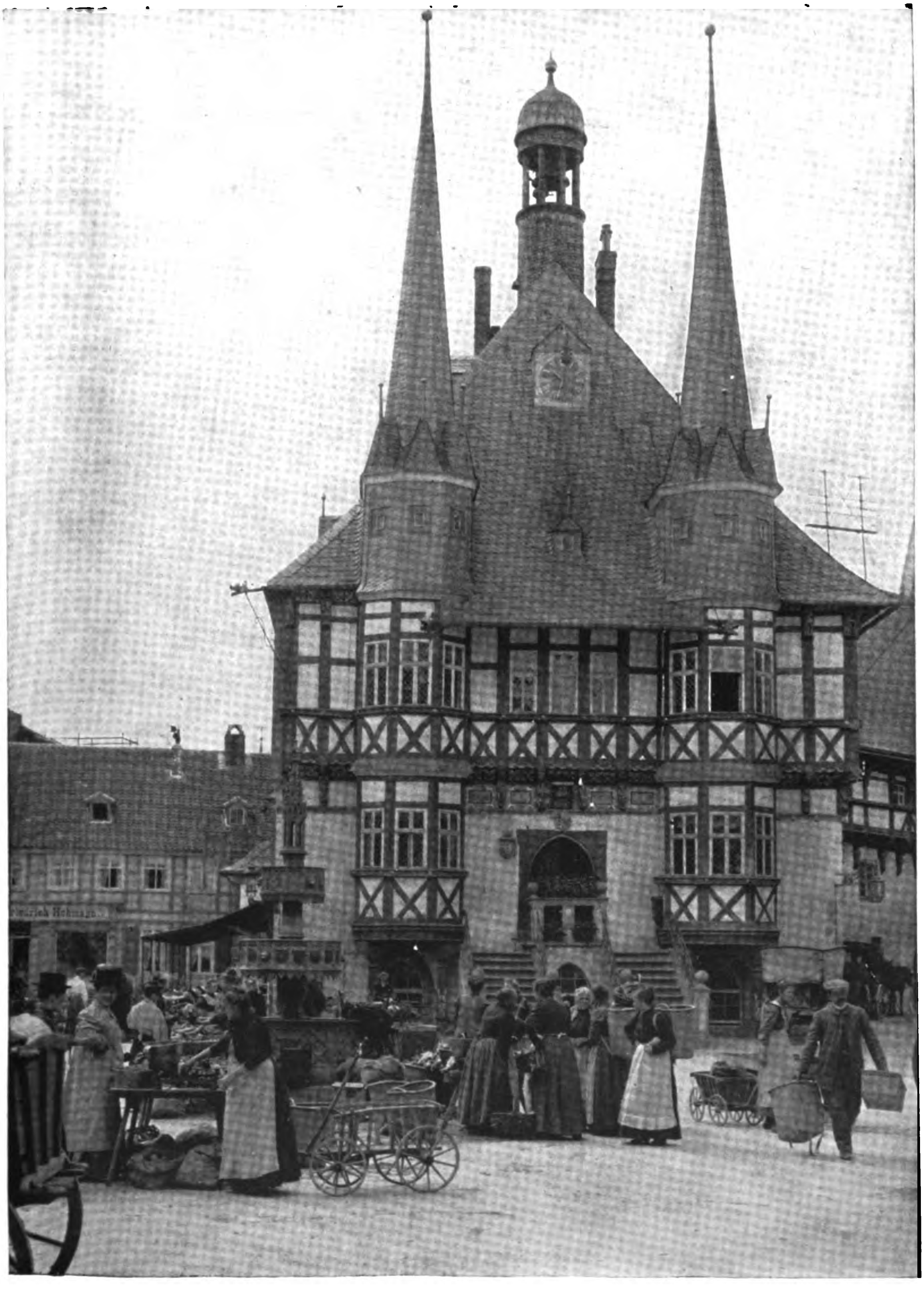
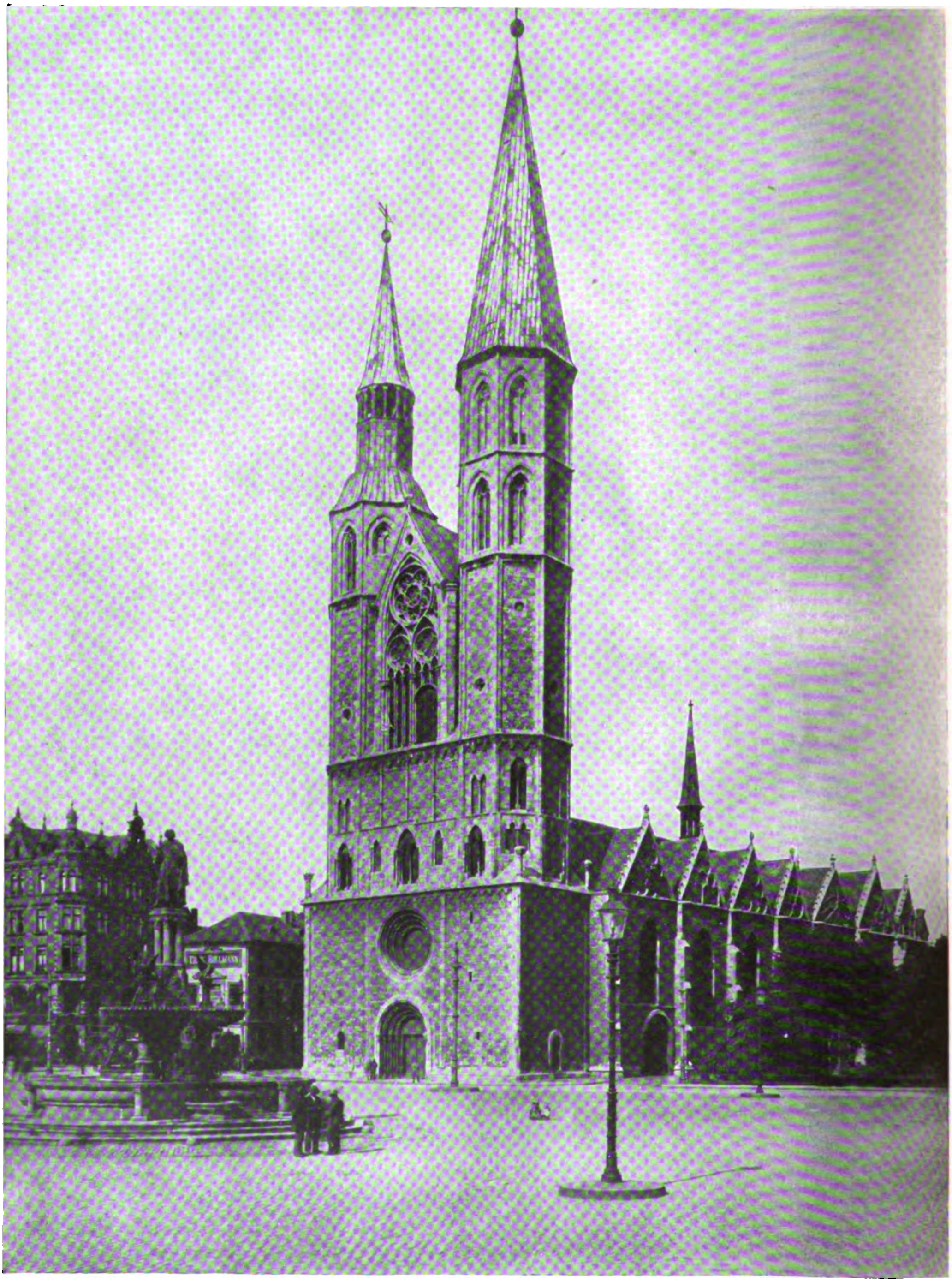


Photo by Emil P. Albrecht

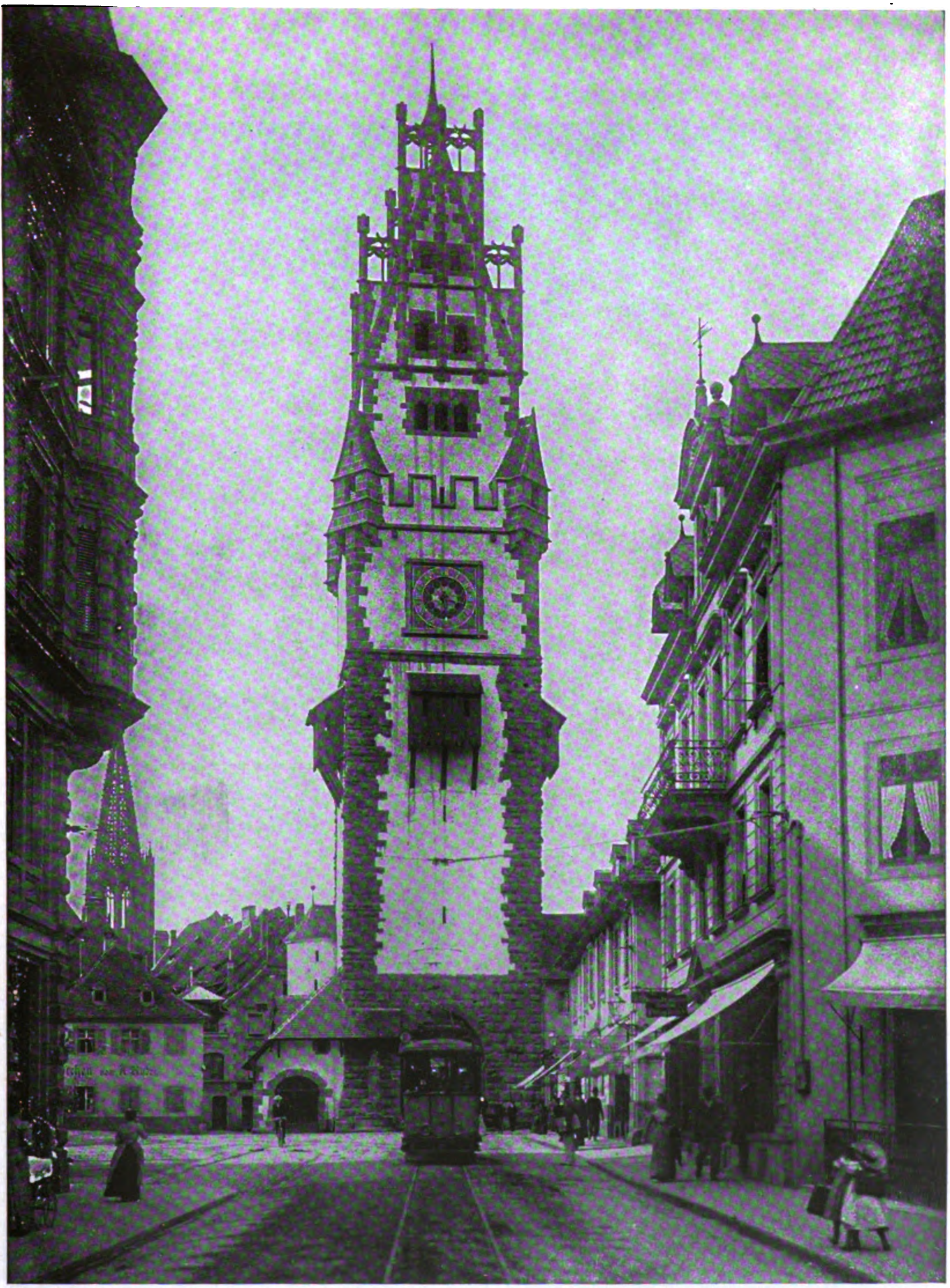
THE TOWN HALL AND MARKET-PLACE: WERNIGERODE, PRUSSIA

There are many picturesque houses in this quaint old town at the foot of the Harz Mountains, but none more so than the town hall, with its timbered façade of 1498



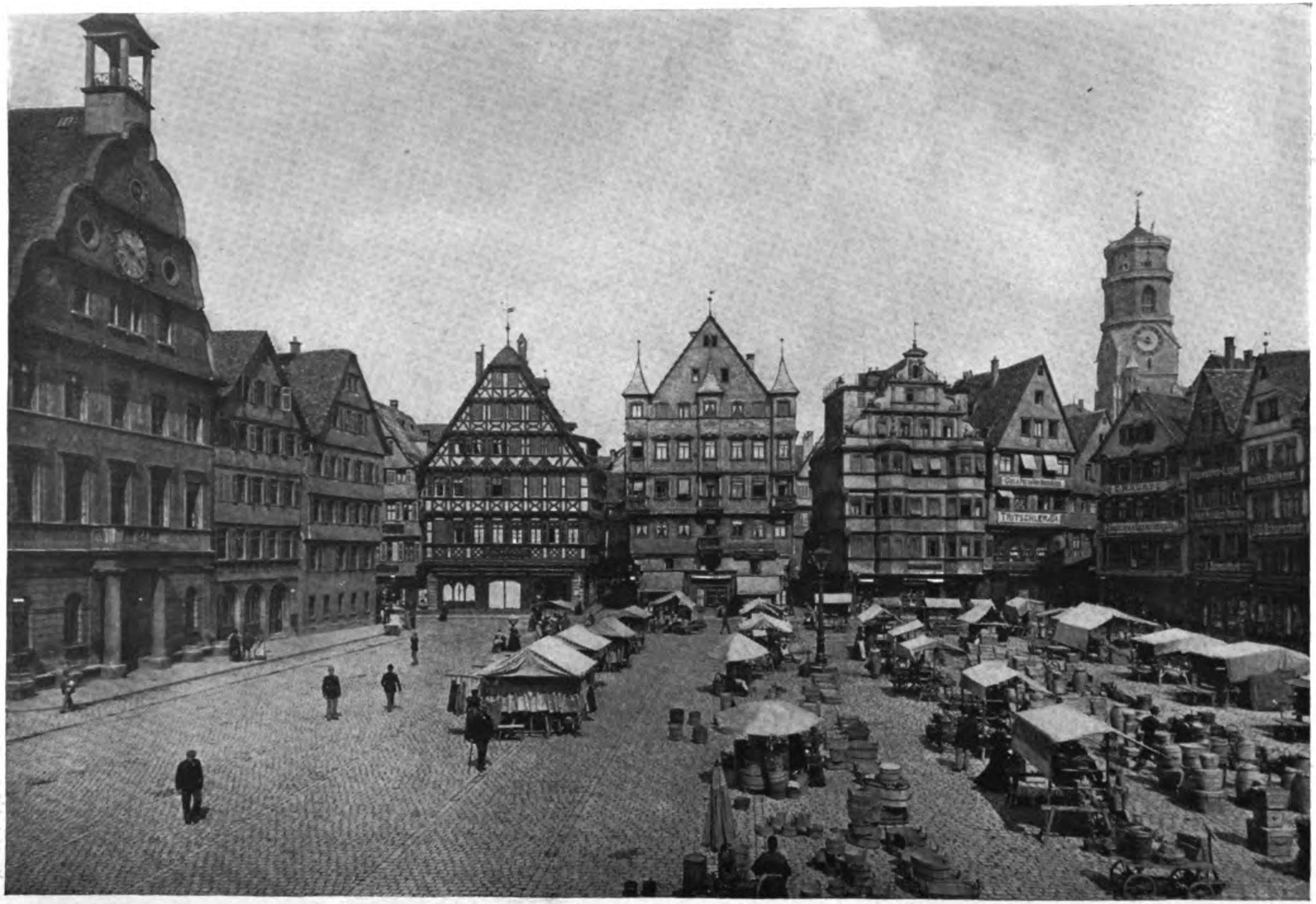
CHURCH OF ST. CATHERINE: BRUNSWICK, GERMANY

This church was probably begun under Henry the Lion. It was altered and enlarged in the thirteenth century and restored in 1887–1890. It gives a good idea of the prevalent style of church architecture in the old northern cities, which had no stone and hence used brick.



THE SCHWABENTHOR IN FREIBURG, NOT FAR FROM STRASSBURG, GERMANY

On this ancient tower is a fresco representing a Swabian peasant driving a wagon laden with wine—a clue to the industry of the region around Freiburg. The city is ideally located, its people are as hospitable as any in Germany, and here come many of the retired men of prominence of North Germany to spend their declining years in peace and quiet.



STUTTGART: THE MARKET-PLACE AND THE TOWN HALL

This is the center of the old town of Stuttgart, and a few patrician families, still clinging to the traditions of old, continue to dwell here, where fashion once reigned, but where the noises and odors of the food market now claim supremacy

Kaiser fine food and drink when he passed their way. But the Kaiser soon put his foot down on such a procedure. He issued an order saying that he would thereafter be offended by sumptuous entainment and delighted with Spartan fare. The German officers' messes thereupon went back to the times of Von Moltke.

Solemn warnings for years have been issued against the abandonment by the people of "the discipline of denial," admonishing that Germany's greatness, a monument of her self-denial, was being undermined by self-indulgence. In the Reichstag, a Socialist member, hearing a speech of Von Bulow's, asking all Germany to retrench, inquired if that meant everybody. An affirmative reply resulted in cutting off $5,000,000 a year from the additional funds voted the Kaiser for maintaining his 54 royal palaces, his ocean-going yacht, his elaborate special trains, and his great collection of high-powered automobiles.

MANY AND BITTER WARS

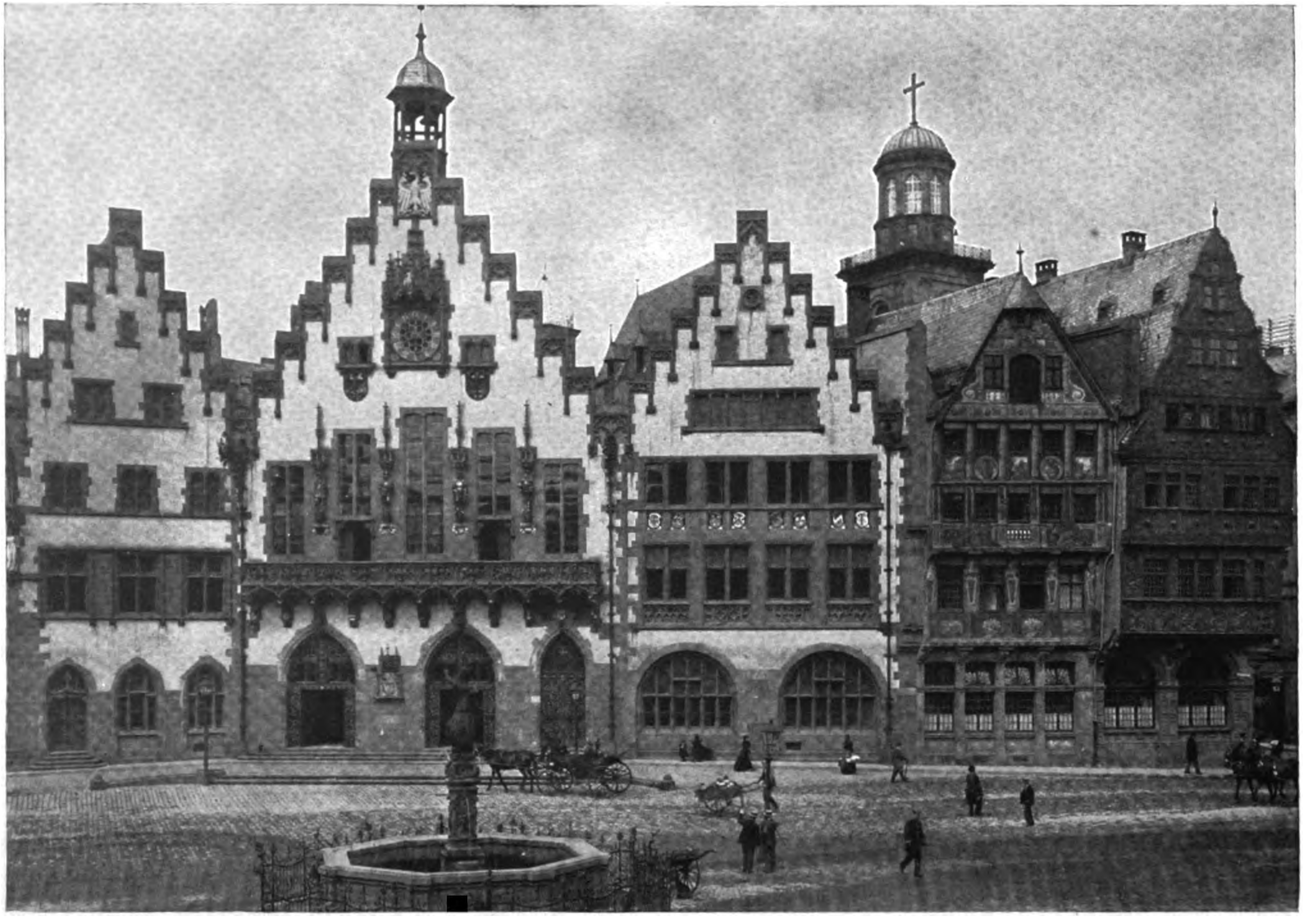
The history of the 26 States which constitute the present German Empire is one long record of bitter wars. Sometimes they combined against Russia, Poland, France, and their other neighbors, but more often they were fighting each other, even more fiercely than England and Scotland fought. As one reads the history of Prussia, Bavaria, Saxony, and the smaller States, one wonders how they raised enough to eat, because armies were always laying waste the fields. Only a people of extraordinary endurance could have survived the almost ceaseless wars that from the days of Charlemagne and until very recent times have devastated what is now Germany.

The Thirty Years' War, in the first half of the seventeenth century, which began as a religious struggle and settled once for all in Europe the principle that men should not be persecuted for their religious faith, reduced the population from 20,000,000 to 6,000,000. "Whole towns and villages were laid in ashes and vast districts turned into deserts. Churches and schools were closed by hundreds, and to such straits were the people often reduced that cannibalism is said to have been not uncommon. Industry and trade were so completely paralyzed that in 1635 the Hanseatic League was virtually broken up, because the members, once so wealthy, could not meet the necessary expenditure. The population was not only impoverished and reduced in numbers, but broken in spirit. It lost confidence in itself, and for a time effected in politics, literature, art, and science little that is worthy of serious study." Yet such was the recuperative power of the German race that in a few decades they were as numerous and wealthy as before.

During the eighteenth century Prussia became an aspirant for the leadership of the German peoples, and through the military genius of Frederick the Great, helped by English gold, humbled Austria and took her place as the most powerful member of the German States. These wars (the Austrian succession, 1741-'48, and the Seven Years' War, 1756-1763) cost the lives of 1,000,000 men and women and impoverished all Europe. In Prussia alone 14,500 houses were burned.

When the Napoleonic wars broke out the Little Corporal early reduced Germany to a loose-jointed Confederation of the Rhine; but his march to Moscow called again into vigorous life the German spirit that seemingly had been crushed, and the German aid given the Allies is history. After Napoleon had been driven to Elba, the Congress of Vienna met and is reputed to have treated the world as so much real estate to be parceled out by the executors of Napoleon's Empire, regardless of the wishes of the populations, which figured in the protocols merely as numbers to be bartered and balanced one against the other. In the process of dividing the spoils the allies were about to go to war with one another, and probably would have done so had not Napoleon's return from Elba recalled them to their senses.

Under the Treaty of Vienna the German States were reconstructed into a confederation, in which Austria received the presidency. There was a diet to settle all matters of common interest, but each State was free to effect alliances as



THE ROMER, OR TOWN HALL OF FRANKFORT, GERMANY

The most interesting historical building in the busy city of Frankfort. It contains the Kaisersaal, where newly elected emperors dined with the electors and showed themselves to the populace from the balcony. It fronts on the Romerberg, or market-place, which no Jew was allowed to cross until the end of the eighteenth century. In the center of this square is a fountain which flowed with red and white wine while the coronation banquet was being served.

it saw fit, except that no State should do anything to injure another member of the confederation.

Before Frederick the Great, Germany had been striving to crystallize around Austria, but, with the ascendency of Prussia, most of the States gathered around her. While the attention of Austria was occupied with subduing the Hungarian rebels Prussia proposed a plan of unification of the German States, with herself as the center of the union. Several States agreed; Austria countered with a rival confederation.

Thereupon the Seven Weeks' War broke out. Bismarck had prepared Prussia for this eventuality. He had formed an alliance with Italy under which Prussia undertook not to make peace until Austria had surrendered Venice to Italy.

A series of Prussian victories, ending with Sadowa, resulted in the peace of Prague, through which Austria finally stepped down and out of German affairs. But, after Austria stepped out, the States could not get together, as Prussia had hoped, and the future was not pleasing in prospect.

THE FRANCO-PRUSSIAN WAR

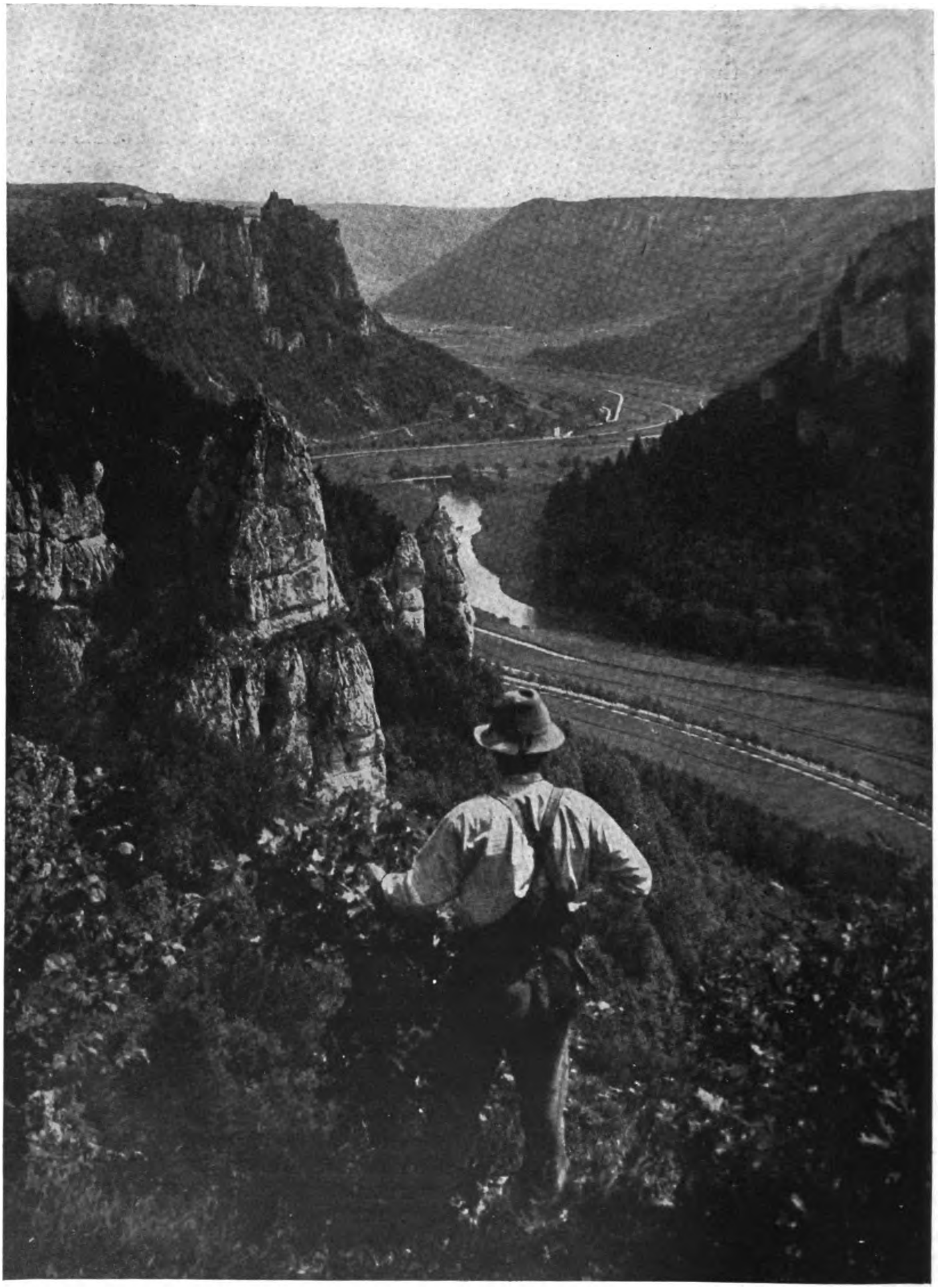
Just about this time there was a vacancy in the Spanish throne. It was tendered to obscure Leopold of Hohenzollern. He refused it. Thereupon France, remembering what had happened to her when the War of Spanish Succession was on, wanted Germany to promise that no German prince ever would aspire to the Spanish throne. Germany wouldn't promise, and the Franco-Prussian War was the result. This war united all the German States. The principalities, constantly quarreling heretofore, were able to get together and to form the German Empire as we know it today.

THE IMPERIAL GOVERNMENT

The constitution of the German Empire dates from April 16, 1871. It binds 4 kingdoms, 6 grand duchies, 5 duchies, 7 principalities, 3 free cities, and 1 territory—26 States in all—into "an eternal union for the protection of the realm and the care and welfare of the German people."

In Prussia the voters are divided into three classes. Every male adult who pays an income tax is entitled to vote, but his vote is not direct. The aggregate of the income taxes collected is divided into three equal parts, beginning with the man who pays the most and down to him who pays but a copper. The list of the heaviest tax-payers, who are first on the rolls and who pay one-third of the total income taxes, composes the first class of electors. The names of those next on the roll, who pay in the aggregate the second third of the taxes, compose the second class of electors. All the others are comprised in the third class. Taking the income tax list and the election returns of the past several elections, it is found, on striking an average, that the first class of primary voters embraces only 3 per cent of the whole number, the second class 12 per cent, and the third class 85 per cent, although in the larger towns the disparity is much greater.

Each class of electors in each parliamentary constituency meets and each chooses one elector. Then the three electors, as chosen by the three classes of voters separately, meet and choose the deputy to represent the constituency in the Prussian diet. As a matter of course, the first and second class electors, representing only 15 per cent of the voters, outvote the one elector representing 85 per cent of the people. That is the reason that the Socialist-Democratic party, by far the largest political organization in Prussia, never was able to elect even a single deputy to the Prussian diet until a recent election, when a veritable landslide captured the second-class voters in seven constituencies and seven Socialists were elected.



A PASS THROUGH THE BAVARIAN MOUNTAINS NEAR IRRENDORF, GERMANY

The National Geographic Society has an immense amount of exceedingly interesting and original material on Austria-Hungary, Russia, Great Britain, and other countries now at war, which will be given to the members of the Society in the coming numbers of its Magazine.

PACKARD

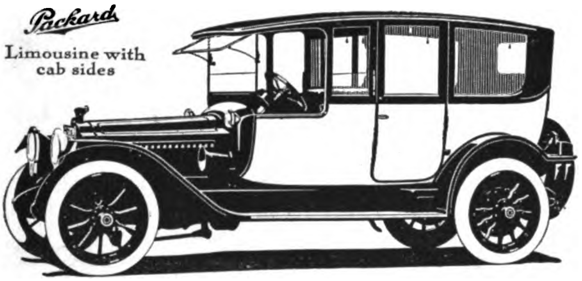
BEAUTY is a human necessity. Taste is the faculty of discerning it.
Every time we make a selection for ourselves, our home or our friends, we are revealing our true selves, and putting ourselves on record as possessing taste or lacking it.

While it is true that some will manufacture the things the many require, it is also true that the many will demand better things.

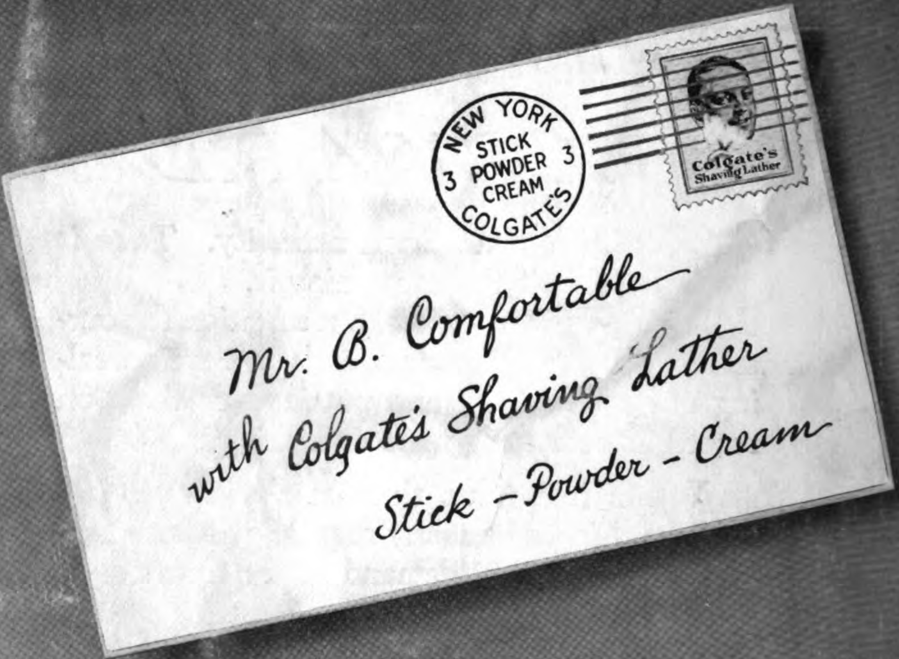
Prestige of the producer increases in direct ratio as raw material is advanced from the level of mere utility to the higher one that seeks to beautify and convey esthetic satisfaction.

FROM A MONOGRAPH ON "TASTE" PUBLISHED IN THE GRAPHIC ARTS

Ask the man who owns one



PACKARD MOTOR CAR COMPANY · DETROIT


NEW YORK
STICK
3 POWDER 3
CREAM
COLGATE'S
Colgate's Shaving Lather
Mr. B. Comfortable
with Colgate's Shaving Lather
Stick - Powder - Cream

Comfort with Colgate's

Choose your favorite method—Stick, Powder, or Cream. By following the directions with each you are sure of an abundant softening lather—making the shave a daily pleasure.

The Stick

Rubbed on the face, every motion softens the beard. Save the last bit and stick it on the new stick. (Economy as well as comfort with Colgate's.)

The Cream

Wet face with brush; squeeze cream on face, or apply direct to brush, and work up lather with brush. Remains soft and creamy until last bit is squeezed from tube.

The Powder

Sprinkle on the wet brush and work up the lather on the face. The last grain is as good as the first.

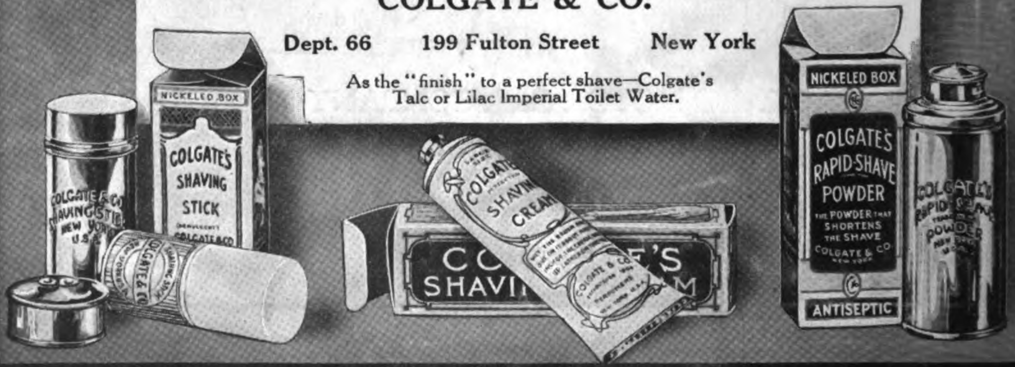
Do not ill-treat your face or handicap your razor by using an inferior lather.

Your dealer has Colgate's—ask for it. Or send us 4c. in stamps for a trial size of Stick, Powder, or Cream.

COLGATE & CO.

Dept. 66 199 Fulton Street New York

As the "finish" to a perfect shave—Colgate's Talc or Lilac Imperial Toilet Water.


NICKELED BOX
COLGATE'S SHAVING STICK
COLGATE & CO SHAVING STICK NEW YORK U.S.A.
COLGATE'S SHAVING CREAM
COLGATE'S SHAVING CREAM
NICKELED BOX
COLGATE'S RAPID-SHAVE POWDER
THE POWDER THAT SHORTENS THE SHAVE
COLGATE & CO NEW YORK
ANTISEPTIC
COLGATE'S RAPID-SHAVE POWDER

PRESS OF JUDD & DETWEILER, INC.

NOV [illegible] 1914

VOLUME XXVI

NUMBER FOUR

THE NATIONAL GEOGRAPHIC MAGAZINE

OCTOBER, 1914

*

CONTENTS

Hungary: A Land of Shepherd Kings

92 Illustrations C. TOWNLEY-FULLAM

England: The Oldest Nation of Europe

11 Illustrations ROLAND G. USHER

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D.C.

$2.50 A YEAR 25 CTS A COPY

NATIONAL GEOGRAPHIC SOCIETY

HUBBARD MEMORIAL HALL
AVENUE OF THE PRESIDENTS AT M STREET, WASHINGTON, D. C.

HENRY GANNETT . . . PRESIDENT
O. P. AUSTIN . . . . . SECRETARY
GILBERT H. GROSVENOR, DIRECTOR AND EDITOR
JOHN OLIVER LA GORCE . ASSOCIATE EDITOR
O. H. TITTMANN . . . VICE-PRESIDENT
JOHN JOY EDSON . . . . TREASURER
F. B. EICHELBERGER . ASSISTANT TREASURER
GEORGE W. HUTCHISON, ASSISTANT SECRETARY

BOARD OF MANAGERS

1912-1914

JOHN JOY EDSON
President Washington Loan & Trust Company

CHARLES J. BELL
President American Security and Trust Company

DAVID FAIRCHILD
In Charge of Agricultural Explorations, Dept. of Agric.

C. HART MERRIAM
Member National Academy of Sciences

O. P. AUSTIN
Statistician

GEORGE R. PUTNAM
Commissioner U. S. Bureau of Lighthouses

GEORGE SHIRAS, 3D
Formerly Member U. S. Congress, Faunal Naturalist, and Wild-Game Photographer

GRANT SQUIRES
New York

1913-1915

FRANKLIN K. LANE
Secretary of the Interior

HENRY F. BLOUNT
Vice-President American Security and Trust Company

C. M. CHESTER
Rear Admiral U. S. Navy, Formerly Supt. U. S. Naval Observatory

FREDERICK V. COVILLE
President of the Washington Academy of Sciences

JOHN E. PILLSBURY
Rear Admiral U. S. Navy, Formerly Chief Bureau of Navigation

RUDOLPH KAUFFMANN
Managing Editor The Evening Star

T. L. MACDONALD, M. D.

S. N. D. NORTH
Formerly Director U. S. Bureau of Census

1914-1916

ALEXANDER GRAHAM BELL
Inventor of the telephone

HENRY GANNETT
Chairman of U. S. Geographic Board

J. HOWARD GORE
Prof. Emeritus Mathematics, The Geo. Washington Univ.

A. W. GREELY
Arctic Explorer, Major Gen'l U. S. Army

GILBERT H. GROSVENOR
Editor of National Geographic Magazine

GEORGE OTIS SMITH
Director of U. S. Geological Survey

O. H. TITTMANN
Superintendent of U. S. Coast and Geodetic Survey

JOHN M. WILSON
Brigadier General U. S. Army, Formerly Chief of Engineers

To carry out the purpose for which it was founded twenty-three years ago, namely, "the increase and diffusion of geographic knowledge," the National Geographic Society publishes this Magazine. All receipts from the publication are invested in the Magazine itself or expended directly to promote geographic knowledge and the study of geography. Articles or photographs from members of the Society, or other friends, are desired. Contributions should be accompanied by an addressed return envelope and postage, and be addressed:

GILBERT H. GROSVENOR, EDITOR

CONTRIBUTING EDITORS

A. W. GREELY
C. HART MERRIAM
O. H. TITTMANN
ROBERT HOLLISTER CHAPMAN
WALTER T. SWINGLE
ALEXANDER GRAHAM BELL
DAVID FAIRCHILD
HUGH M. SMITH
N. H. DARTON
FRANK M. CHAPMAN

Entered at the Post-Office at Washington, D. C., as Second-Class Mail Matter

Copyright, 1914, by National Geographic Society, Washington, D. C. All rights reserved

NOV 7 1914
WASHINGTON

VOL. XXVI, NO. 4 OCTOBER, 1914

THE
NATIONAL
GEOGRAPHIC
MAGAZINE

HUNGARY: A LAND OF SHEPHERD KINGS

BY C. TOWNLEY-FULLAM

THE church in the morning of her splendor; old Gothland successfully repelling the Turanian van on bleak Baltic shores; the Saracen, last depositary of a delicate Mauretanian culture, justifying under Andalusian skies the superb dominion of the Caliphs; Charlemagne arbiter of the Roman world; pillars of old faiths fallen; Pantheons deserted—these are the phenomena which herald the birth of that century fated to witness the last great organized irruption of a barbarian people.

For the rest the figures are shadowy and indistinct. Pirate and paladin, exarch and cenobite flit through the twilight of the gods, are swept into the current, and disappear. They do their work, quit themselves as men, and pass on to be dissolved in the Universal. . . . And the new forms germinate.

It is this seething, swash-buckling, brawling mass into whose midst, noisiest, most careless of all, strike the fabled descendants of the mighty Attila—the Hungarians, who give themselves the name of Magyars. Not inopportunely, for they bring with them the breath of Asia and a quickening impulse: horse thieves charged with an ozonic principle; destroyers with the mission of saviors; pagans, the destined guardians of the church; barbarians, the future pillars of Latin civilization.

They drive their wedge through the Dacian outposts of the great Slav Empire and destroy its potentialities for centuries. They see the stately river, the River of Ovid and Marcus Aurelius; illimitable plains. They see the enemy, without whom there is no joy in life. Their dream is fulfilled; their many-tentacled being grips the land.

THE FOUNDER OF HUNGARY

The Magyar shows his fangs and the West begins to palpitate. There is erected against him the Eastern March, the Pale, to be known hereafter as Austria. . . . At length, but at the psychological moment, there is born to him one of those demigods whom Nature at rare intervals sends into the world to favored races—men to whom it is given to mold, out of lawless and joyous rabbles, the orderly unit, instinct with racial ideals and national purpose; men who combine in their diviner parts the attributes of Moses, Orange, Romanoff, and Hamilton.

The name of this man is Vaik, the first King of Hungary 1000-1038, whose personality is obscured under the title of St. Stephen, Apostolic King, and Baptist, Father, Lawgiver, Shepherd of his people. He "converts" them; draws, quarters, and disembowels them. In time the circumstance that a Magyar remains alive becomes strong legal presumption of a state of grace. To the genius of that magnificent and truculent barbarian, who takes his children by the scruff of the neck and rubs their noses into the comity of the Latins, Hungary owes, if not her fundamental constitution, at least her

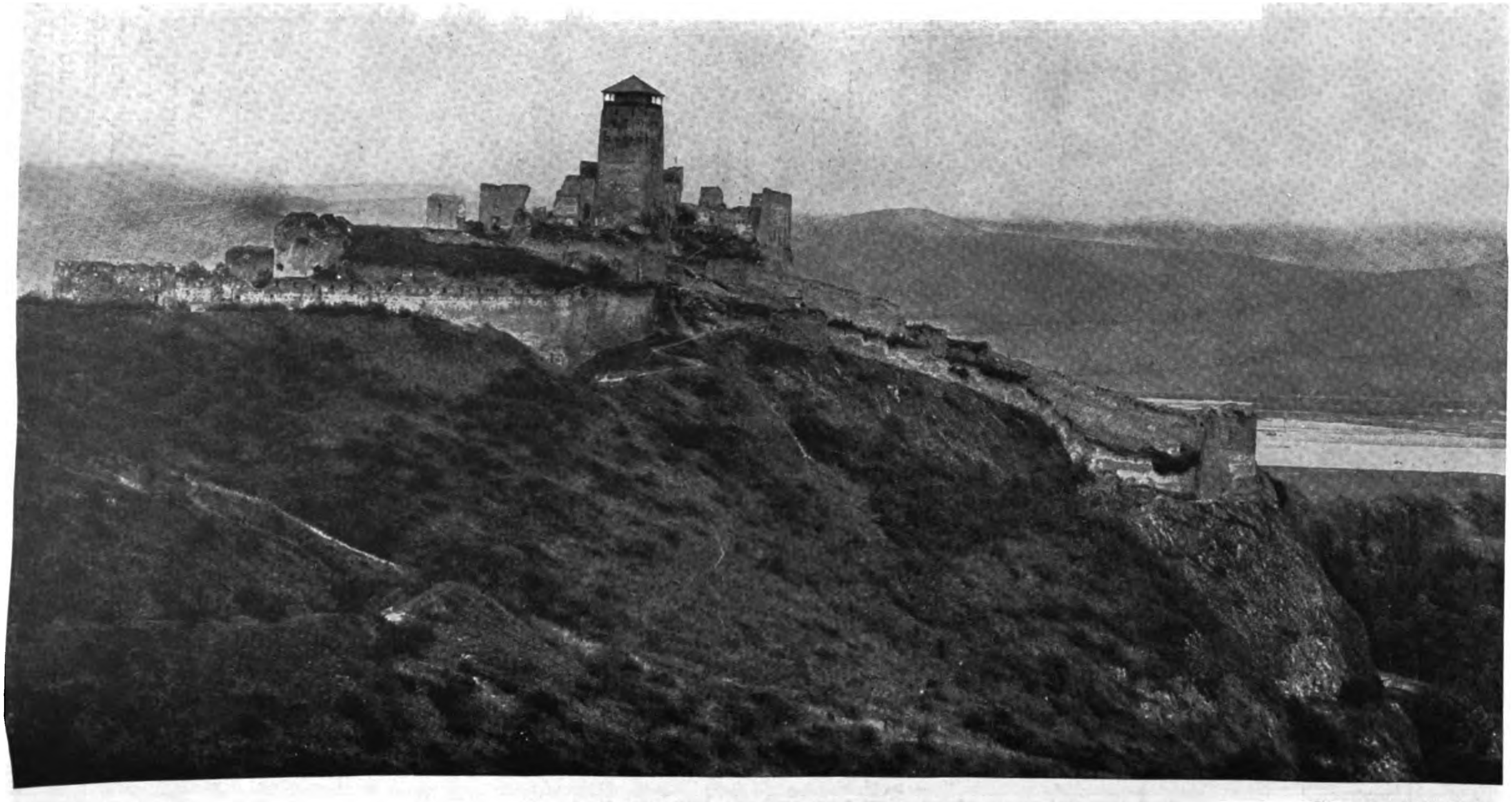


Photo by A. W. Cutler

ANCIENT FORTRESS AT TRENCSEN, HUNGARY, COMMANDING A WONDERFUL VIEW OF THE VAG VALLEY

The old well here, 590 feet deep, was hewn in the rock by Turkish prisoners many years ago. The castle is on the northern border of Hungary, about 125 miles southwest of Cracow. The Kingdom of Hungary forms one of the two equal States of the Austro-Hungarian Empire, the other State being Austria. It comprises slightly more than one-half of the land area and about two-fifths of the population of the Empire. It contains the largest plain in Europe—the great central plain west and south of Budapest—and its population is mainly agricultural, while the people of Austria depend largely upon manufacturing industries for a living.

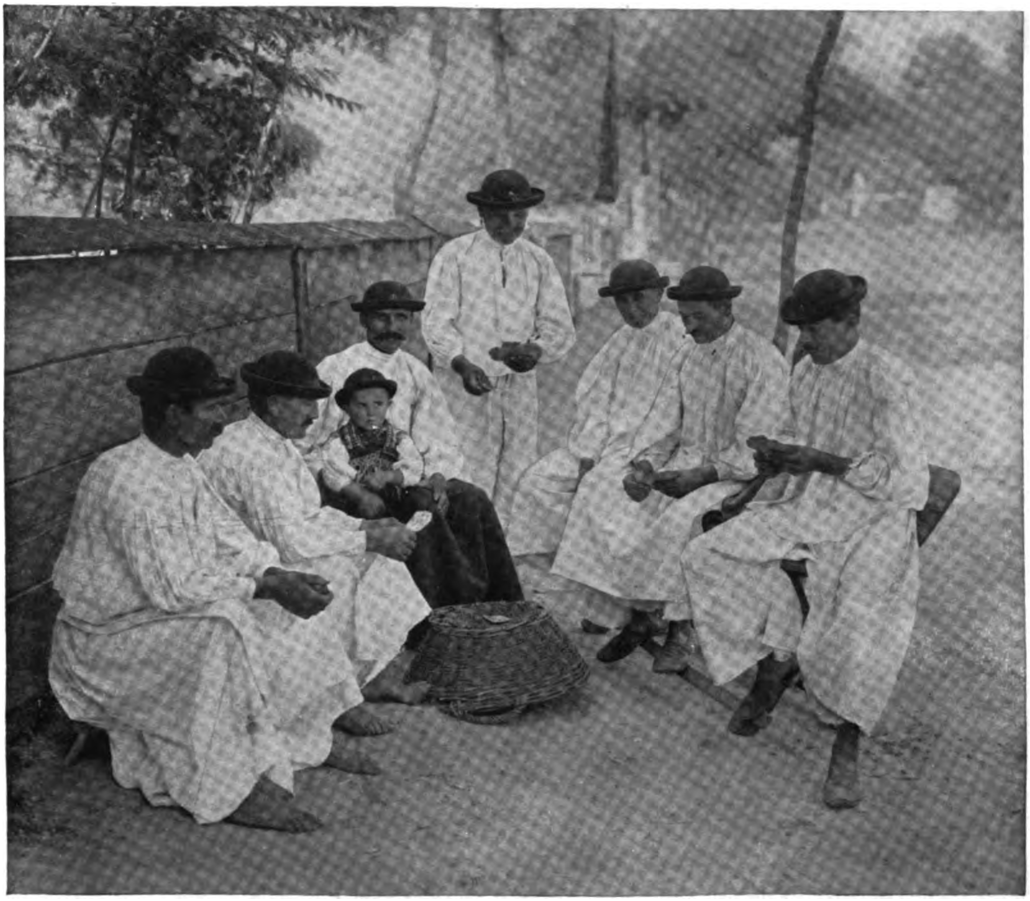


Photo by Erdelyi

SUNDAY AFTERNOON AMUSEMENT AT A SMALL VILLAGE IN HUNGARY

These men are wearing the cut of trousers which is the fashion in Hungary (see also pages 338 and 339)

theories of state and all that is helpful and lasting in her corporate and juridical entity.

Within four centuries Hungary becomes the first power in Central Europe. Her King Sigismund, displacing the Pope, himself presides at the Council of Constance (1414), and gives Huss to the flames of hell. A moment she stands peerless, and then she falls. Robbed of her strength by internal dissensions, which are caused by the selfishness and corruption of feudal lords and by the enslavement of the peasants, she cannot successfully meet the onslaughts of Turk and Christian neighbors.

MEN NOW LIVING WHO WERE BORN SERFS

Rural Hungary is upon the plane of rural England. Physically she has a beauty all her own. True, the noble magnificence of the English estate is not reproduced; but there is a general air of the feudal tradition, heightened by castle, tower, and battlement, which bring Norman England appreciably nearer. Abbeys and monasteries, creations of pure architectural beauty, there are not; but the Rococo, the Seccessio, and that splendid Moorish type which passes, strangely enough, for Gothic, fairly represent the achievements of the race. The baronial splendors of the old homes of the magnates are first patriarchal and then wonderful (see pages 312 and 315).

The picture is of an old-world State, the character of whose people is influenced by its historic past, whose

Photo by D. W. Iddings. Copyright by Keystone View Co.

A NATIVE WAGON JOURNEYING THROUGH A FOREST IN THE TATRA MOUNTAINS, ABOUT FIFTY MILES SOUTH OF CRACOW

symbols and outlook, constitution and subsidiary organism, bring back Merrie England of Robin Hood and the Roses.

There are men now living who were born serfs and brought up under the shadow of the corvée and the jus primæ noctis; men with rights of pannage under seignorial lords who, to this moment, represent the romance of chivalry and the high tradition of the Rolands of dead yesterdays.

Rural Hungary is still the dream of other days, the quaint still life which brooded in pre-Renaissance pictures and peeps out under the magic of Washington Irving's touch—restful, alluring, and casting the reflective grace of innocence upon its mighty sons. "Sweet Auburns" that are passing in other climes nestle about every placid valley of this.

Here is "Arcadie, home of the happy"; here is "the forest primeval"; here are "vast meadows stretched to the eastward and pasture to flocks without number."

The vision of Magyar halcyon days is indeed alluring. Wide stretches of gold relieved by the green of virgin woods; Indian skies; hills decorated with white stone obelisks to mark the Stations of the Cross; bright fields nodding in honor of

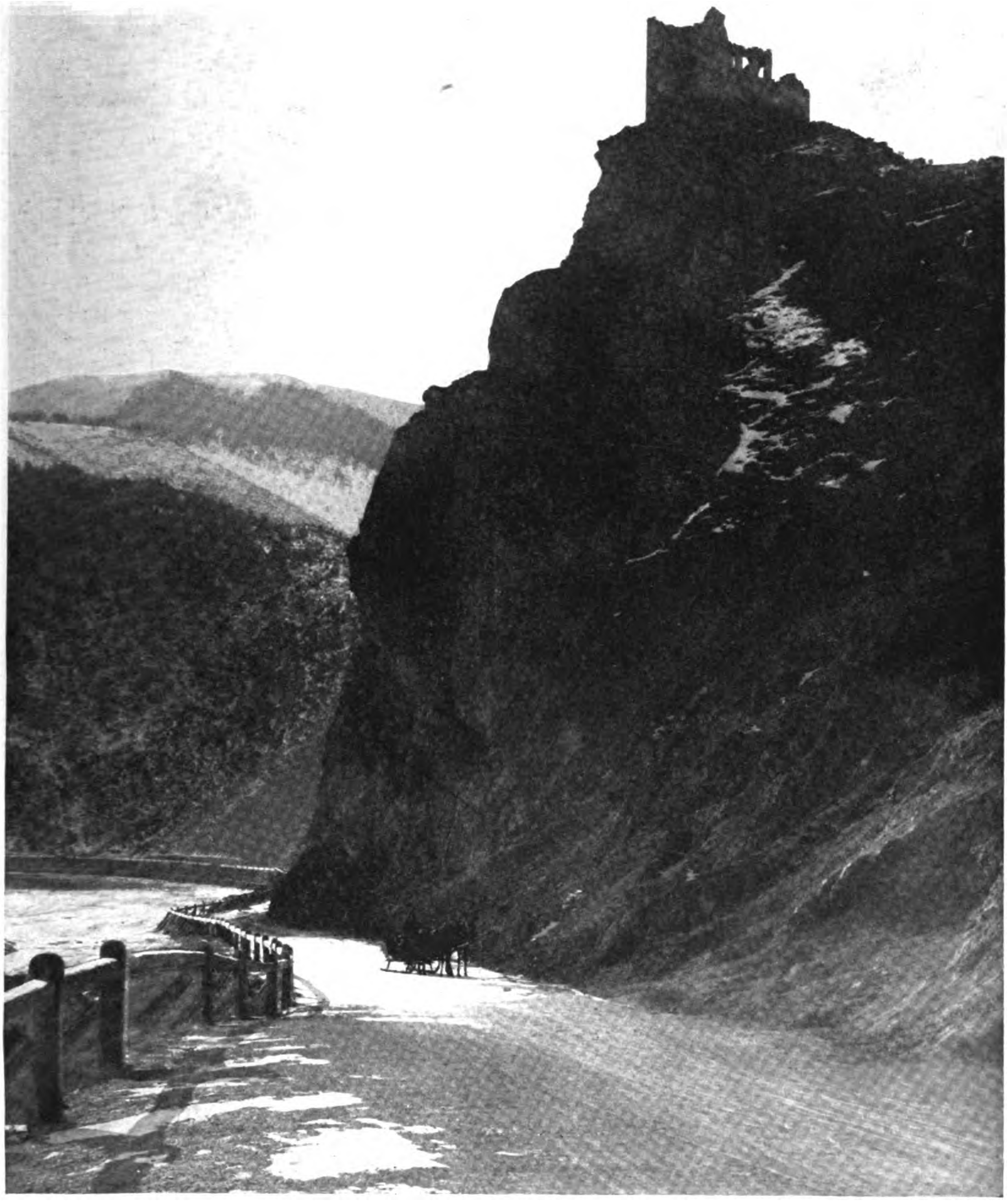
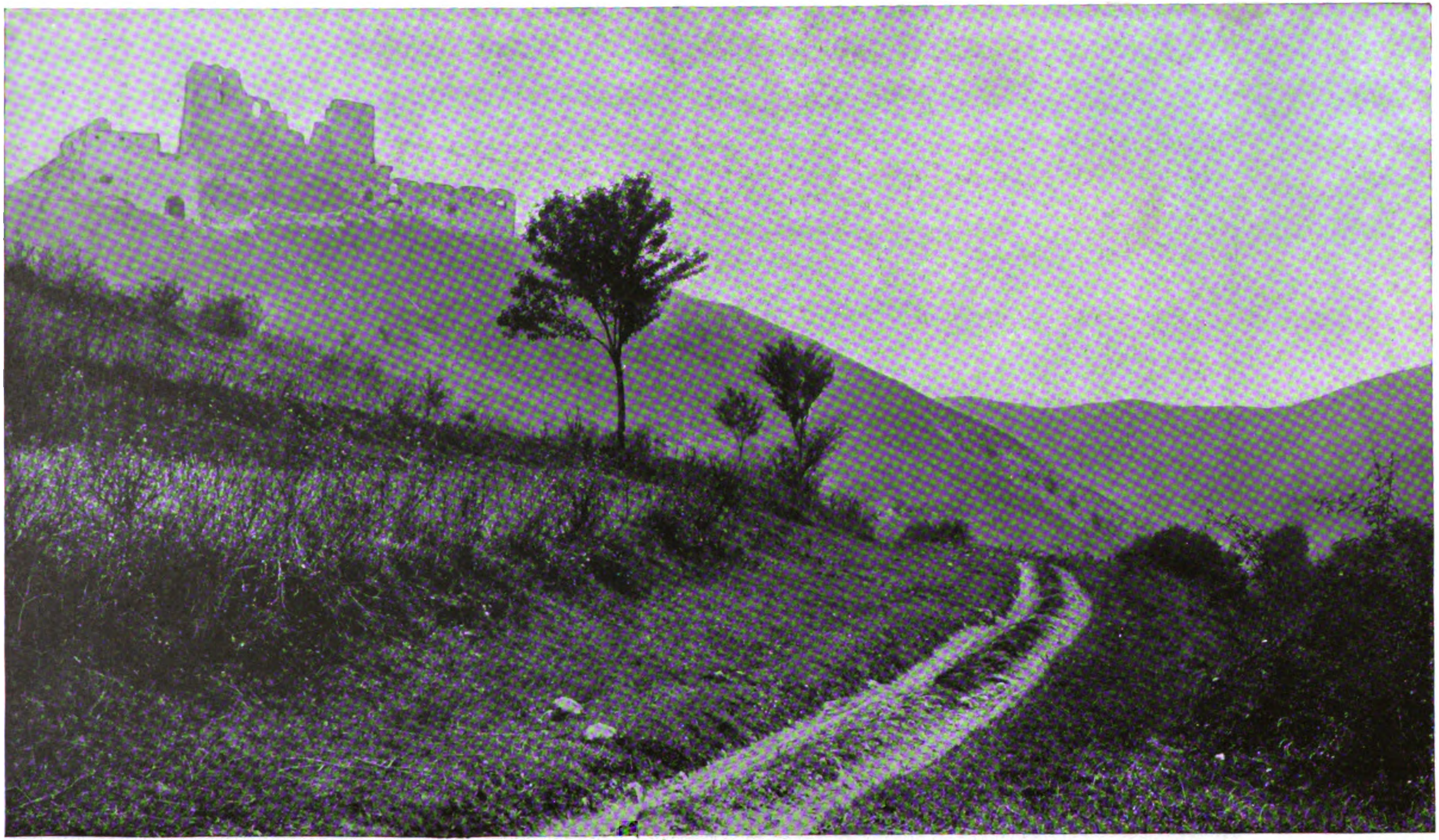


Photo by Erdelyi

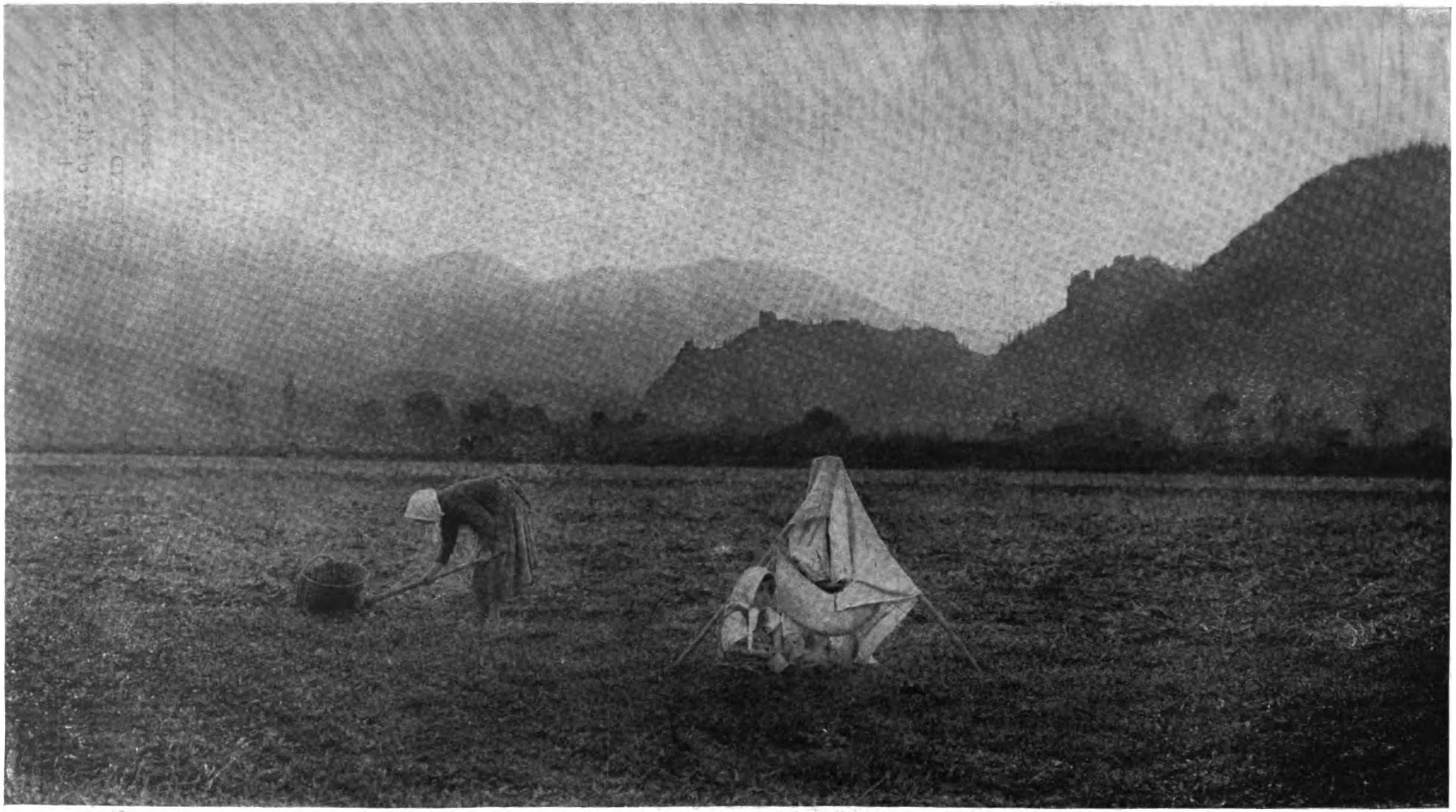
THE CASTLE OF SZTRECSNO, IN THE CARPATHIAN MOUNTAINS, HUNGARY: THIS IS CHARACTERISTIC COUNTRY SOUTH OF CRACOW, WHERE THE AUSTRIAN AND RUSSIAN ARMIES ARE NOW BATTLING



ONE OF THE MOST PICTURESQUE AND INTERESTING CASTLES IN HUNGARY

Photo by A. W. Cutler

It is situated in an exceedingly wild and isolated spot in northern Hungary. Here, about 1624, lived the fiend, Elizabeth Bathory, a widow, with two aged servants—a man and woman. Thinking thus to preserve her beauty, this woman lured to the castle young girls, whom she murdered, and then bathed in their blood. It is said that 300 girls lost their lives before the crimes became known. Eventually the Countess was starved to death in one of the rooms of the castle.



A SCENE IN A QUIET VALLEY IN NORTHERN HUNGARY

Photo by A. W. Cutler

A common but very pretty sight is the women working in the fields, their babies in hammocks slung on tripods dotting the ground. "Rural Hungary is still the dream of other days, the quaint still life which brooded in pre-Renaissance pictures and peeps out under the magic of Washington Irving's touch—restful, alluring, and casting the reflective grace of innocence upon its mighty sons. 'Sweet Auburns' that are passing in other climes nestle about every placid valley of this. Here is 'the forest primeval'; here are 'vast meadows stretched to the eastward and pasture to flocks without number'" (see text, page 314).

Photo by Erdelyi

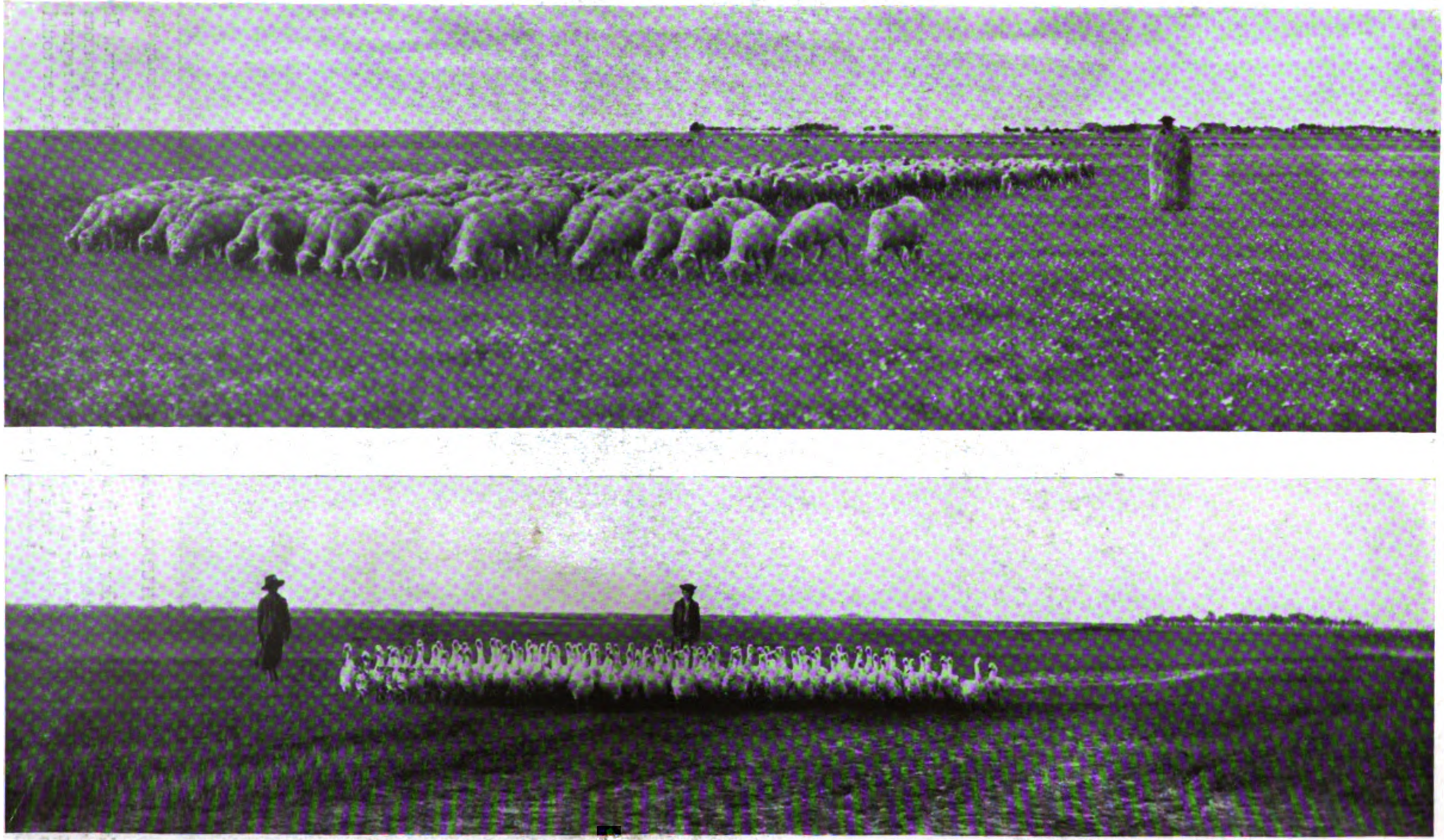
RURAL HUNGARY IS UPON THE PLANE OF RURAL ENGLAND

"Physically she has a beauty all her own. True, the noble magnificence of the English estate is not reproduced; but there is a general air of the feudal tradition, heightened by castle, tower, and battlement, which bring Norman England appreciably nearer" (see text, page 313).

A HUNGARIAN PEASANT GIRL

Photo by Erdelyi

"This brave, patient, enduring folk has sung its race back to its ancient freedom. It has sung, in the sweet mother-tongue that but for it had been long forgotten, of the glorious dead and the stricken field, of memories enshrined in wonderful lore, of hope and of regret; never of despair. For it has, withal, that touch of humor which none but a Magyar could so finely have described as 'the smile between tears'" (see text, page 327).



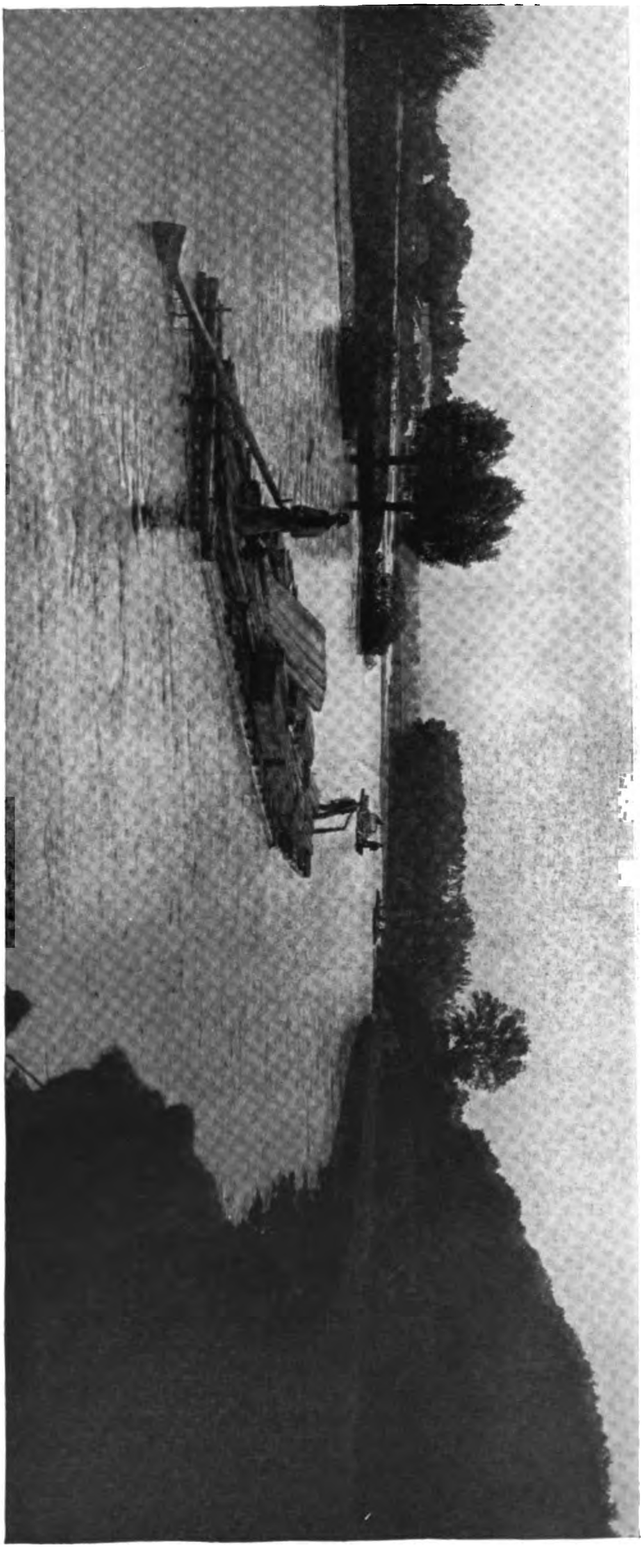
Photos by A. W. Cutler

SCENES ON AN IMMENSE ESTATE OF 300 SQUARE MILES OWNED AND MANAGED BY THE CITY OF DEBRECZEN, HUNGARY some holy one looking down from the little shrine upon his charge; here the Gipsy encampment, there the gay homestead; anon the great expanse relieved by oases and the fading away into the forest depths of Transylvania.

When the land is snow-bound, swept by the keen, clear, cold air of the white north, and the long winter nights fall, great wood-fires crackle on bare hearthstones; children and old folk turn to the spinning of silk; the schools take their toll, and virile energies are given over to basket-weaving, reed-plaiting, and wood-carving, just as when Horatius kept the bridge by yellow Tiber "in the brave days of old."

A LAND OF SHEPHERD KINGS

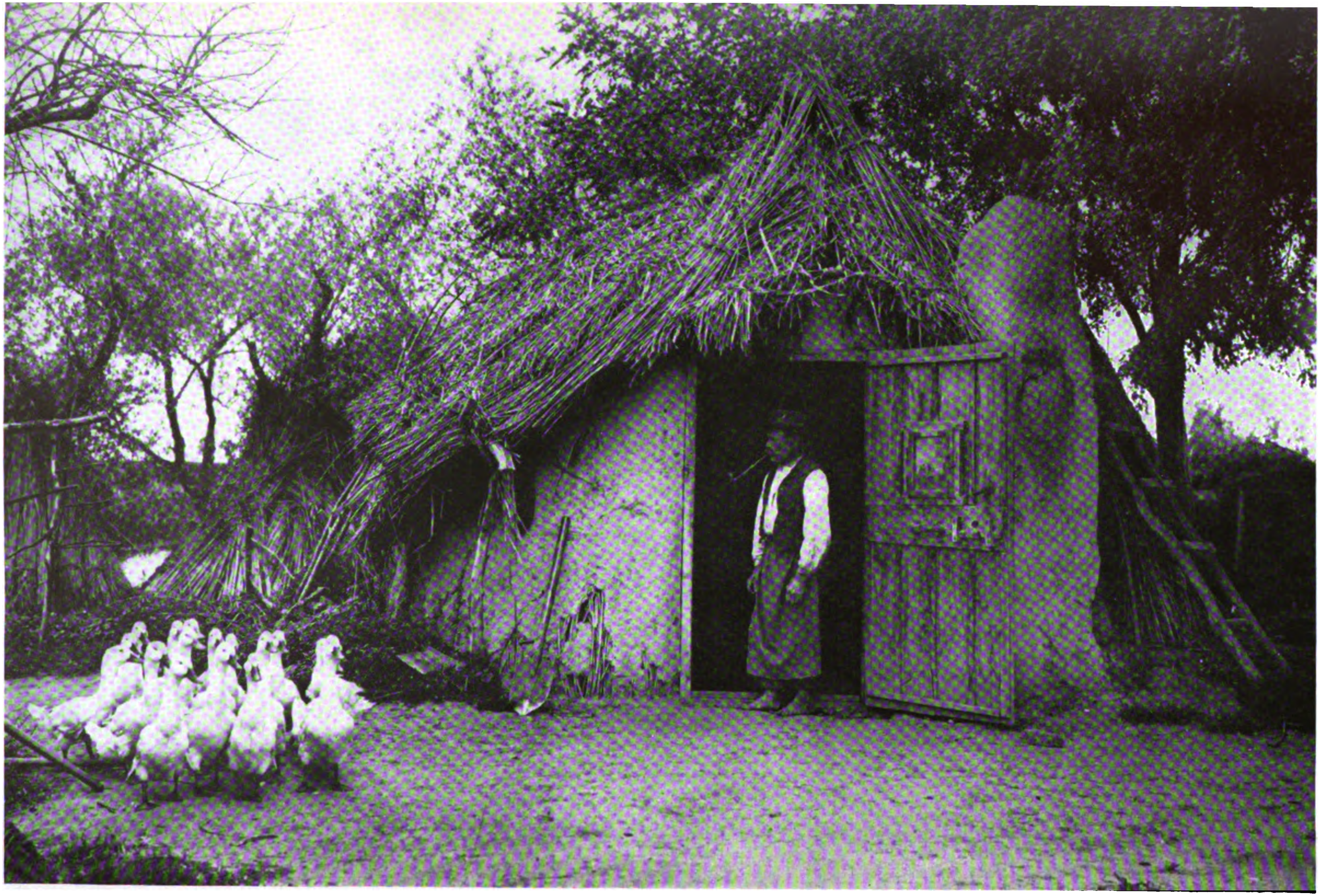
What may be the psychological keynote of a pastoral and peasant people, shepherd kings, whose whole corporate national life has been one long test of endurance that in the end has tired out Turk, Teuton, Slav, and even Destiny herself? A musical, wine-loving, hospitable race; warm, generous, and combative; proud and vain; blood-brother in temperament to the impulsive Celt; dowered like him with the curse of Reuben, with



RAFTS LADEN WITH TIMBER COMING DOWN THE RIVER VAG AT POSTYEN, HUNGARY

Photo by A. W. Cutler

These rafts are usually controlled by Slovaks, who are very skillful in the use of the long sweep oars—cleverly escaping snags, rapids, etc.



PRIMITIVE FISHERMAN'S HOME ON THE BANKS OF THE HORTOBAGY RIVER, HUNGARY

Photo by A. W. Cutler

Photo by A. W. Cutler

SLOVAK WOMAN ENTERING THE TOWN OF MUNKACS, HUNGARY, CLOTHED IN HER SHEEPSKIN COAT AND LEADING THE OXEN HARNESSED TO THE WAGON

a total incapacity to unite on great issues and the power to fight on any soil but his own, but spared the Celtic reproach of having disturbed all States but founded none.

Imagine this people, its gods still the bards of the victor's camp, cut off from all the world we know by its Turanian tongue, whose beauty chained the admiration of Cardinal Mezzofanti (who is said to have spoken 58 languages), but holding its own as a minority by sheer force of character in that strange pentecostal mosaic of race, creed, and caste which holds the Danube and the Central Plain in fief for Christendom.

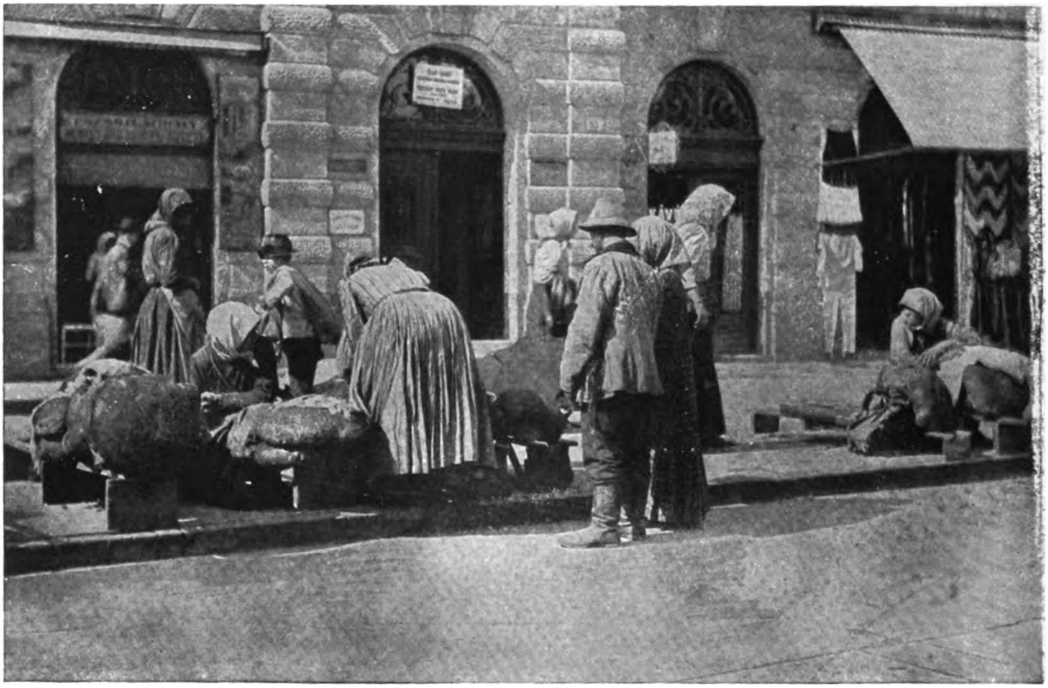
Imagine a virile stock which can still sit and think, can mourn its past in a fair present, can fall into gleaming frenzy as its harp or picture-poet storms a delicate imagination with breathless deed; a race which combines the Buddhist aversion from action with the Celtic instinct of opposition; improvident. again, as the Celt; lavish, naïvely charmed at the courtesy of the stranger; simple, with the barbarian lust of pleasure to the eye; sensitive to its inmost chords to gentleness—a passionate, chivalric, lovable, dreamy race of fatalists; the true Asian mystery. Not so Asian, however, that it could

> "Let the legions thunder past
> And plunge in thought again."

"*Lora! Lora!* To horse! To horse! One with the legion!" The contemplative side of the Asiatic inheritance would give instant way to the atavism of the Attilian tradition.

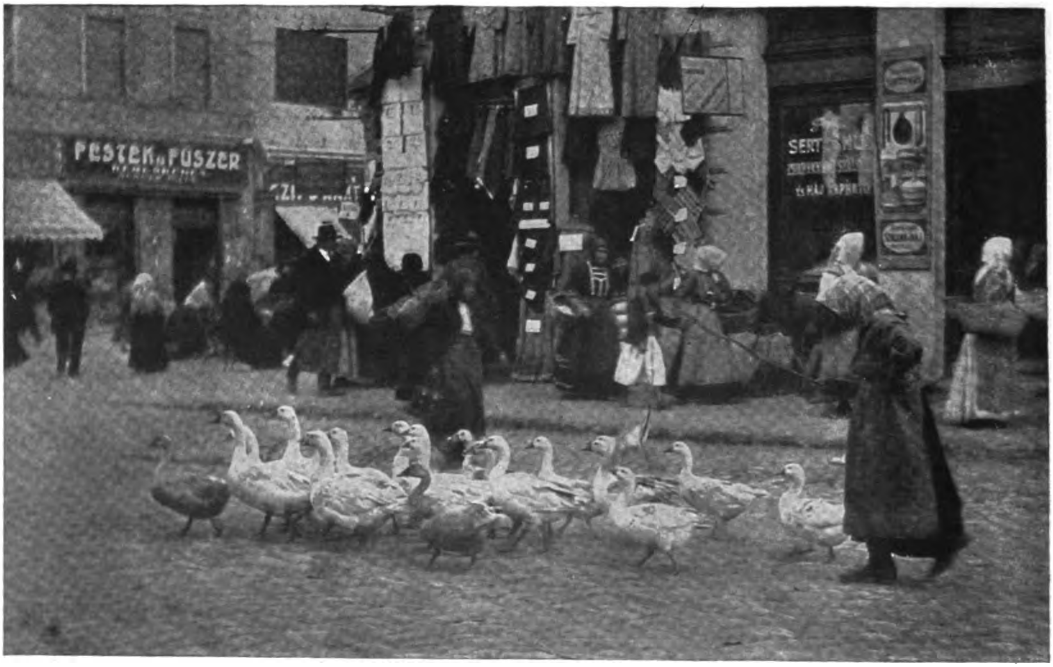
"THE SMILE BETWEEN TEARS"

Perhaps the true psyche of a race might be gathered from its folk-lore. The mine is rich and rare. Here the keynote is a sad and plaintive being mourning dead glories, but electrified to his strong depths by the barbaric beauty of battle-songs. The language itself is a picture-poem, fitted like the Doric for the alto-relievo of rough, untutored emotion; fitted like the Phrygian for the



THE HUGE LOAVES OF BREAD IN THE MARKET AT DEBRECZEN, HUNGARY

Bread is the chief article of food among the peasants, and the size of the loaf is proportionately large. *One* loaf is as much as a man or woman cares to carry at a time



A STREET SCENE IN DEBRECZEN, HUNGARY

Photos by A. W. Cutler

A bit of paper attached to a piece of string skillfully dangled over the heads of the geese successfully keeps them in the way they should go

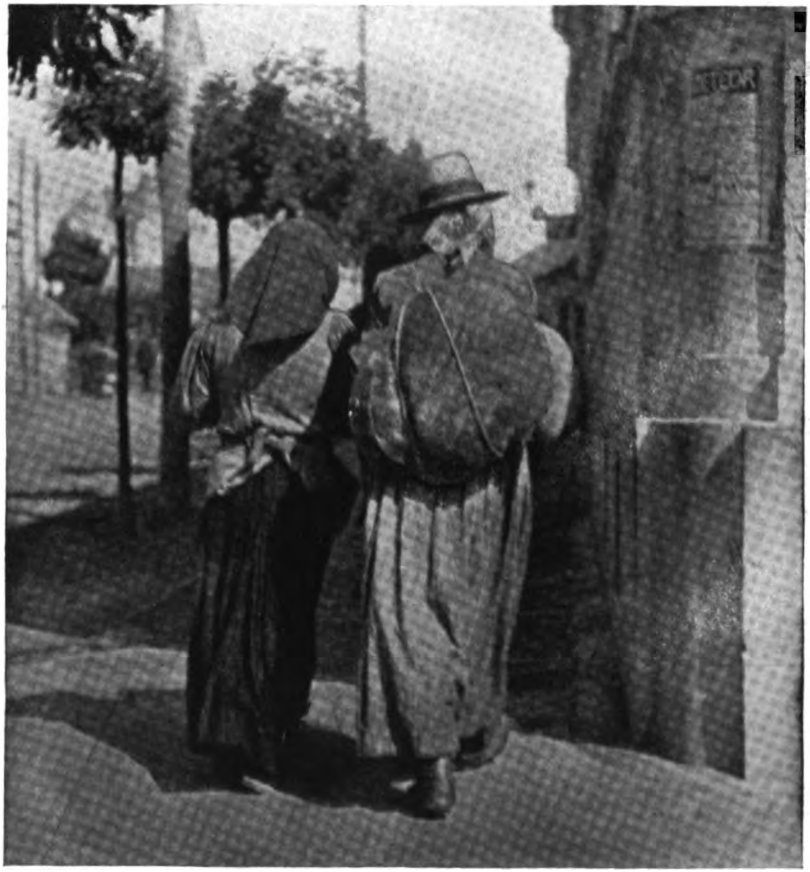


Photo by A. W. Cutler

PEASANT WOMAN AT DEBRECZNY, HUNGARY, RETURNING FROM MARKET, WITH AN ORDINARY LOAF OF BREAD ON HER BACK

She carries on her head a straw hat, which she has bought for her husband. Her own head-covering is similar to that of the woman she is walking with

cadences of sorrow, yet lacking Attic grace.

No true Magyar of the Plain could recite a battle lyric of Petöfi to the end; its drunken glory would slay all utterance. No pure Magyar could listen without emotion to the story of the sorrows of Iluska, nor would the serious beauty of such imaginative inlay work as *Balaton* make vain appeal to the cultured stranger.

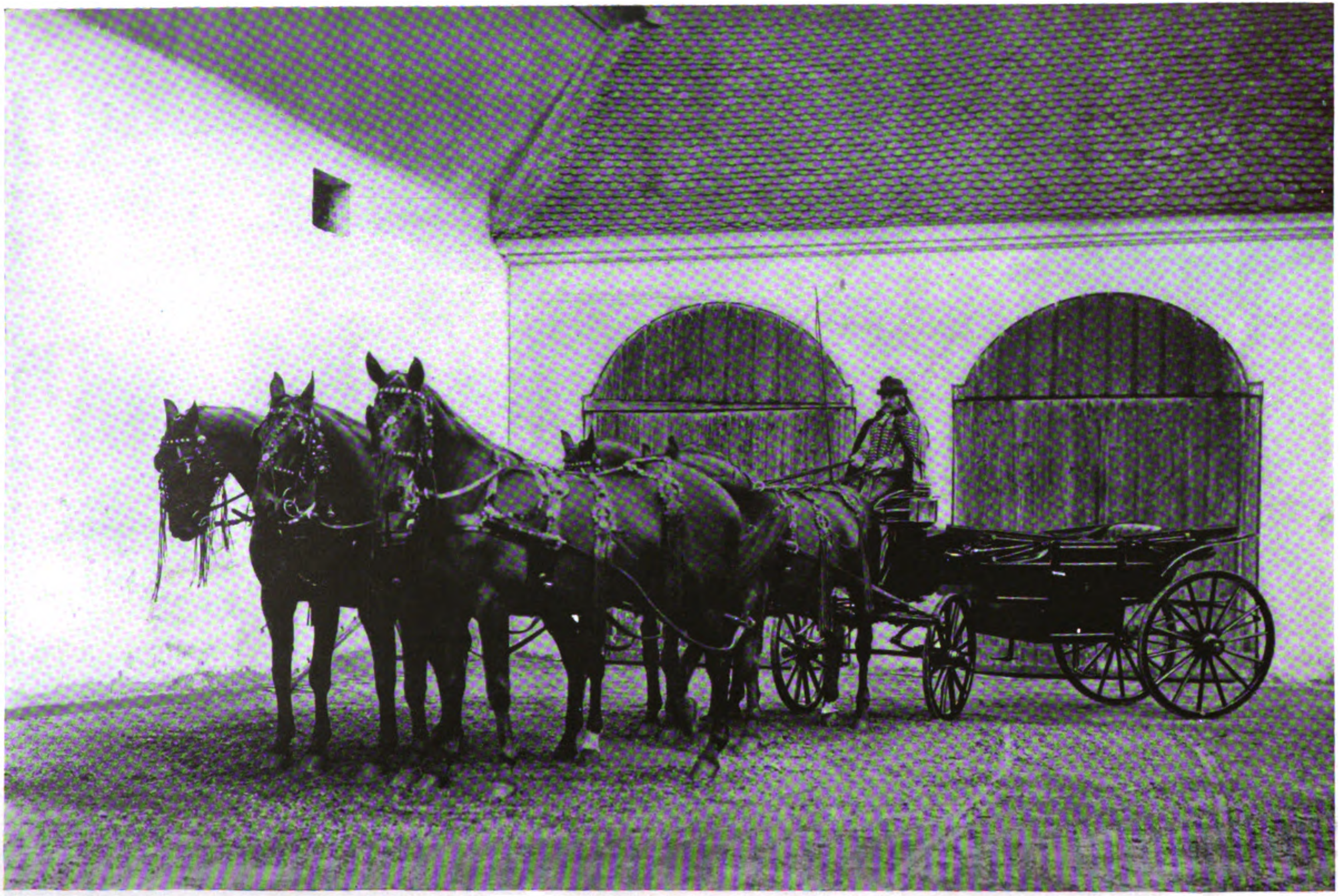
There is no Prometheus, no Electra, no Udolpho, yet the weird and terrible have seldom been so exquisitely combined as in the greatest of all the sagas, recording the somber march of Csaba's spectral army, the bodies that cast no shadow, every one La Tour d'Auvergne, *"mort sur le champ de bataille,"* returning to the far-off Asian home for sepulture; its rising from the dead and appearance in a moonless sky as it passed along the firmament to battle for the last time for its kin attacked in Transylvania.

> "Learned men call this the Milky Way.
> The *real* name is *Hadak utja*, the
> Path of the Warriors."

These are the pure saga. The unwritten annals of the race are enshrined in its music. There the patriot Magyar turns for the sad chronicles of Hungary, the well-beloved, and hears old dim traditions of a far-off Asian home of

> "that imperial palace whence he came"

in the soft and dreamy cadences of the



THE MAYOR'S CARRIAGE AT DEBRECZEN, HUNGARY

Photo by A. W. Cutler

Note the three horses harnessed abreast in front. This is seen only around Debreczen. Debreczen is the third city of importance in the country, with a population of about 100,000. The city owns a farm called the Hortobagy Puszta, with 50,000 head of cattle. It is an immense treeless, grassy plain, relieved only here and there by the huts of the shepherds, which are surrounded by small groves of acacia (see page 320).

peasant who sings he knows not what nor why, but sings because he must.

No one can say whence these songs have come. The peasant says they wander in the air. It may be; this air is surely tenanted. What is true is that he and his have preserved the nation.

This brave, patient, enduring folk has sung its race back to its ancient freedom. It has sung, in the sweet mother-tongue that but for it had been long forgotten, of the glorious dead and the stricken field, of memories enshrined in wonderful lore, of hope and of regret; never of despair. For it has, withal, that touch of humor which none but a Magyar could so finely have described as

"the smile between tears."

THE GENUINE ORIGINAL MAGYAR

Pastoral Hungary has features all its own. It stretches across the vistas of the Great Plain in the region of the Hortobágy. There is the genuine, original Magyar, the Centaur-Mazeppa, who, like his sires of old, that rushed Alexander on the plains of Sogdiana, rides like a devil of the twilight; eats, drinks, sleeps on his small, tireless charger, and chokes with pure delight in lust of life and rush of wind. The long white *gatya*—no penitent sheet—the embroidered sleeveless waistcoat, the plumed or be-ribboned hat, the gorgeous mantle, the deep-bowled pipe, mark this tanned Bacchanalian cavalier more surely than does the anthropologist. He cultivates no circus trick, but he and his horse are Freemasons in one craft.

There is nothing spectacular in this man's work nor annals. In the main he meets with ruminative docility which rarely extends him. His blood-brother, the shepherd of the night, sustains himself on sheep cheese and milk, and in his lonely vigils could still do service to astronomy. The Queensland squatter has no such run as the shepherd of the plain, whose vistas are wide, illimitable, and peaceful.

Change in pastoral Hungary is imperceptible, but the modern spirit, the fruit of competition, is making itself felt. Sleepy medievalism feels the galvanic touch of modern coöperative principles.

The national asset is the horse, as is natural in the case of a race where man and horse were inseparable in death as in life. Now he is, in State policy, a ward of court. Highly specialized State studs on great domains receive him from Arabia, from England, from the fastnesses of the Karst and the stock of the village; exhaust upon him all the theories of the Sledmere stud; breed, lend, sell, give, and altogether play Providence to the trend of his evolution. Private owners there are in plenty, each anxious to emulate the luck of Baltazzi, whom Kisber, son of the immortal Kincsem, dowered with the Garter of the British Turf.

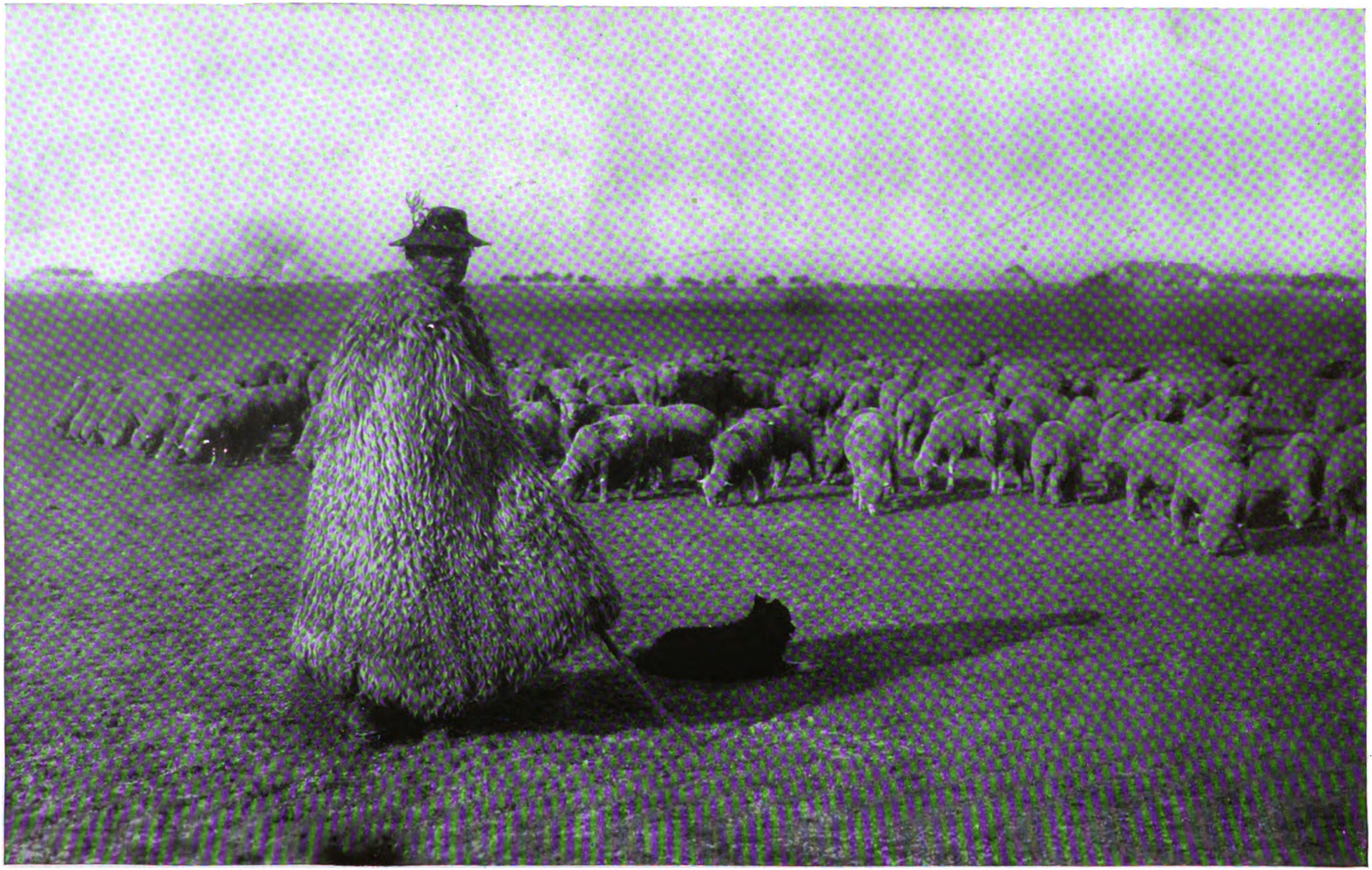
The typical herd of native cattle gives the impression of a vast forest of horn rising in symmetrical crescent form. But it is not an economic asset, and is doomed. The buffalo has honor in the land. Under the yoke she is patient and enduring; her needs are primitive; her milk rich in all the constituents which make milk hygienically valuable.

For the rest, the ugly boar, rooter in the forest, the deer, and black bear provide sport tinctured with danger. The sporting instinct of a Quorn fox is altogether wanting in the native breed. Here he is shot out of hand, a doom followed by the obloquy of neither man nor dog. Wolves there are, too, in hard times—long, gaunt, fierce-jowled brutes, outcasts of the steppes, rather nomadic—but these are the spoil of the Székelys, the fabled descendants of Attila's people in Transylvania.

THE AGRICULTURAL DEPARTMENT ASSISTS WISELY AND ENERGETICALLY

The agrarian interest being the legitimate sphere of an agricultural State, it follows that the Magyar peasant should be the object of particular care. So he is. "Thou shalt have," says the Agricultural Department, "no other gods but me."

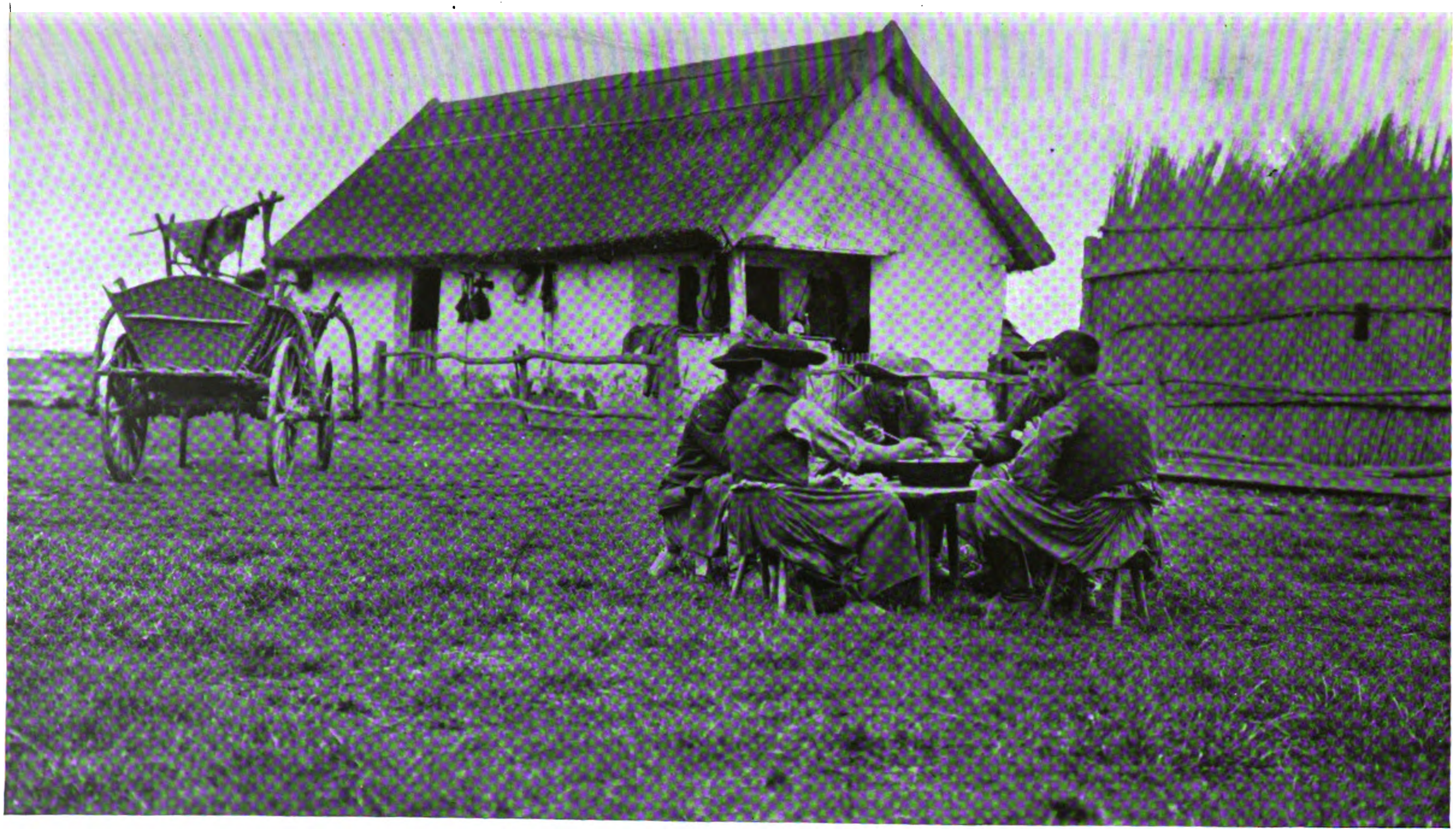
Does the peasant need a steam-plow from fairyland across the ocean, seed, saplings, labor, money, a market, a winepress, a homestead, instruction, irrigation, serum, manure literature, medicine, midwives, spawn, silkworm eggs, stallions for his brood mares, homes for his



HORTOBAGY SHEPHERD IN HIS "FURS"

Photo by Erdelyi

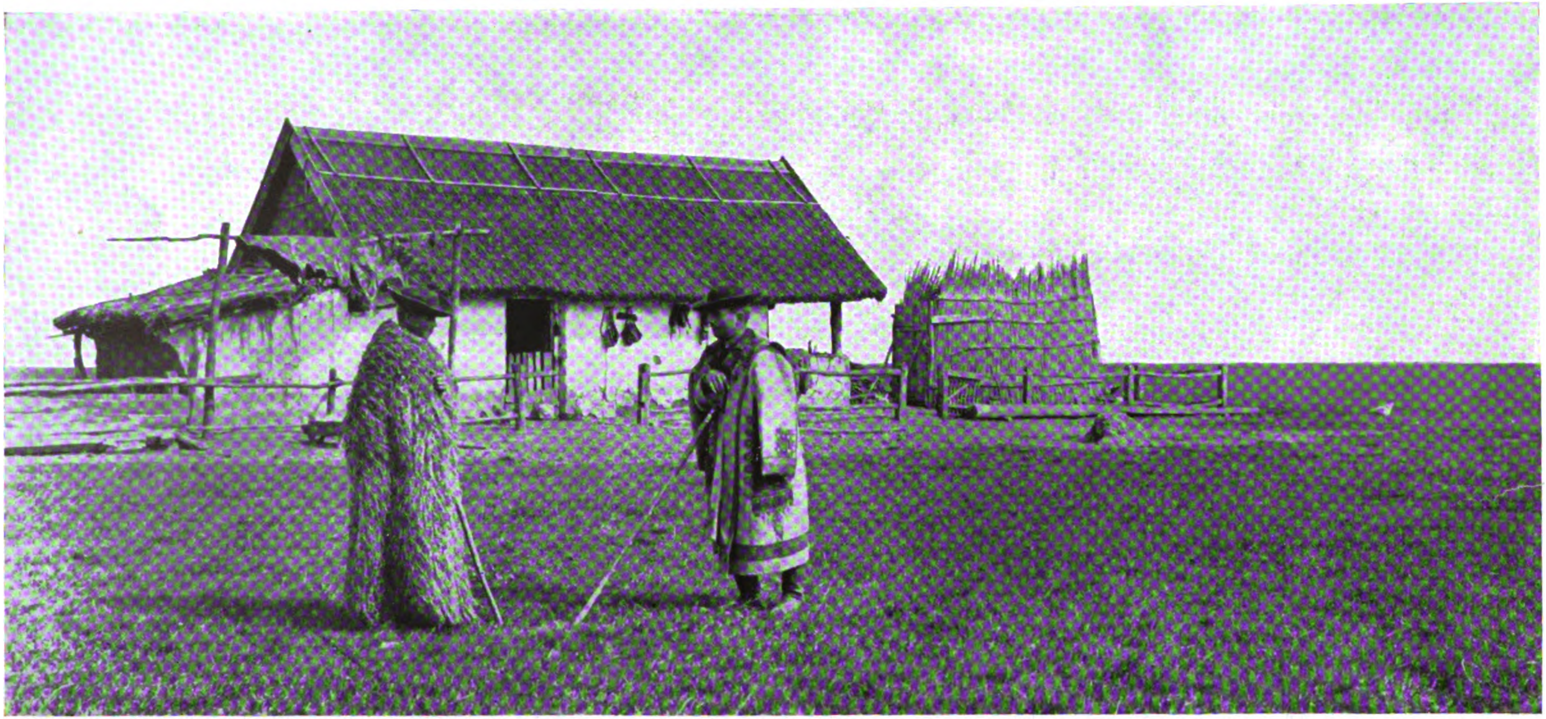
These fur coats are now in such demand by the armies in the field that Hungary and all the countries of southeastern Europe have forbidden the further export of these skins



HUNGARIAN COWBOYS AT AN EVENING MEAL

Photo by A. W. Cutler

They sit on low stools round a low table, which has a hole in the center, in which is placed a large bowl, usually containing soup, made very hot with pepper. Each man has a long spoon with which he helps himself direct from the bowl. This soup and bread constitute the meal. These men are wonderful horsemen, practically tireless in the saddle, and can handle a lasso while riding fast with extraordinary skill.



ONE OF THE MANY LONELY STATIONS SCATTERED OVER THE HORTOBAGY

Photo by A. W. Cutler

Here the cowboys and shepherds live year in and year out, about six or eight at a station. Most of the men are single and have lived all their lives on the hortobagy. Time means nothing to them; they do not know the days of the week. Their watch is the sun, and at night they can find their way, if need be, about the great plain by the aid of the moon and stars. They go to town perhaps twice in a year. A shepherd and cowboy are here seen chatting. When engaged in conversation they always lean on their long staffs, as shown in the picture. The men cook their meals and usually eat them in the curious shelter of canes on the right of the station.

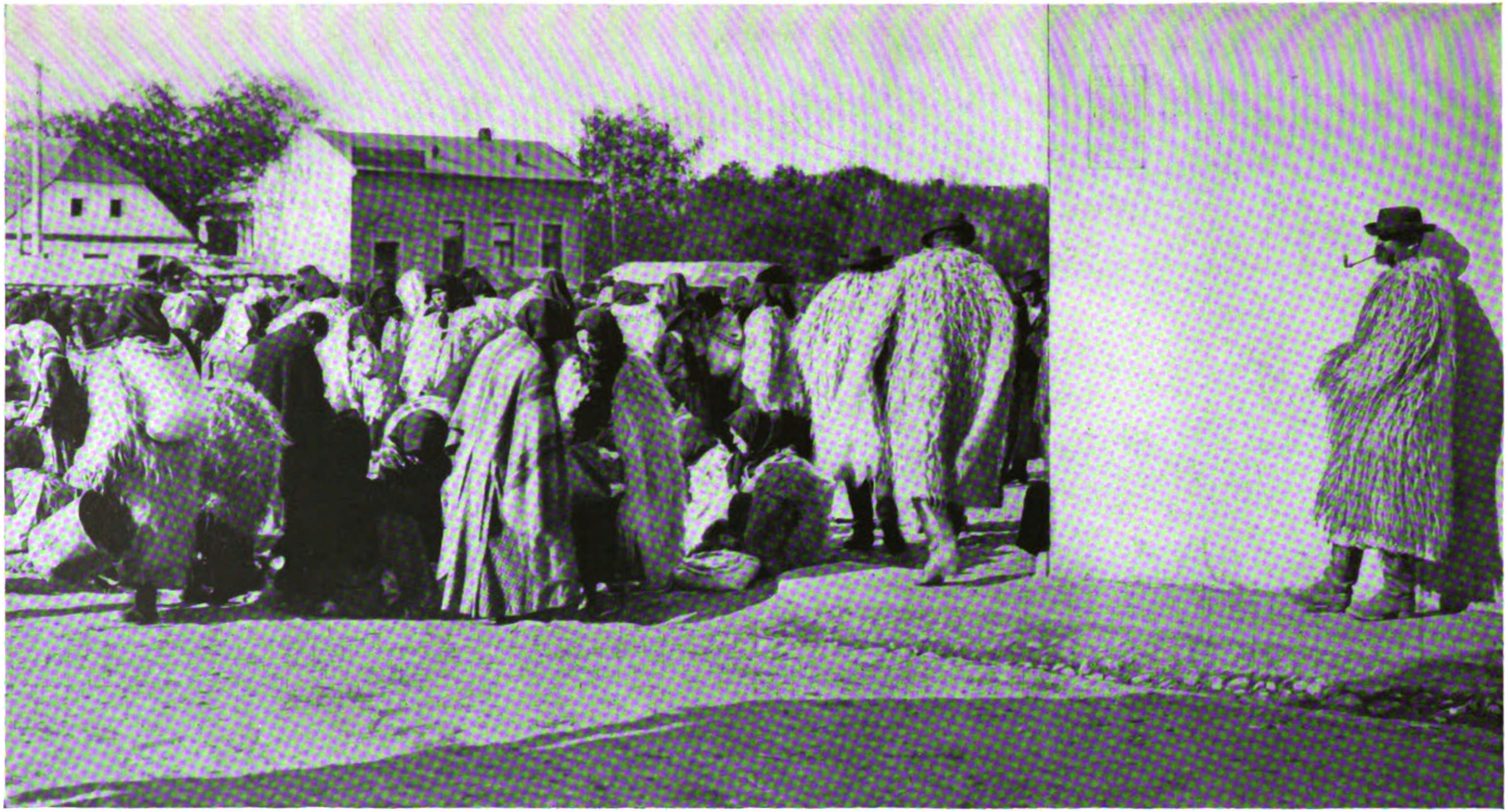
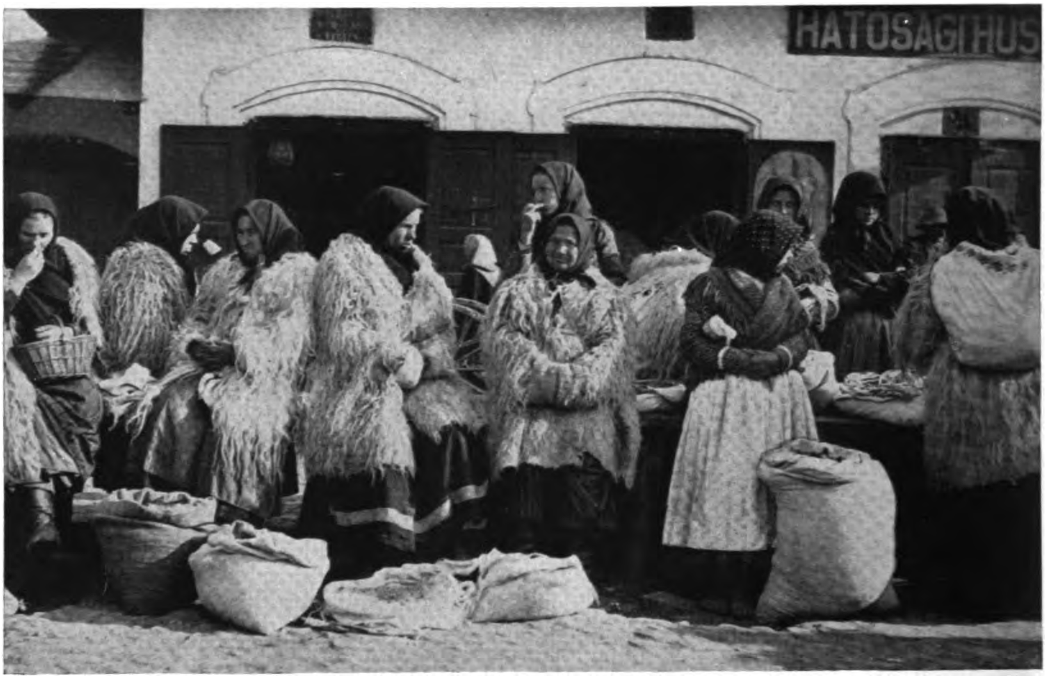


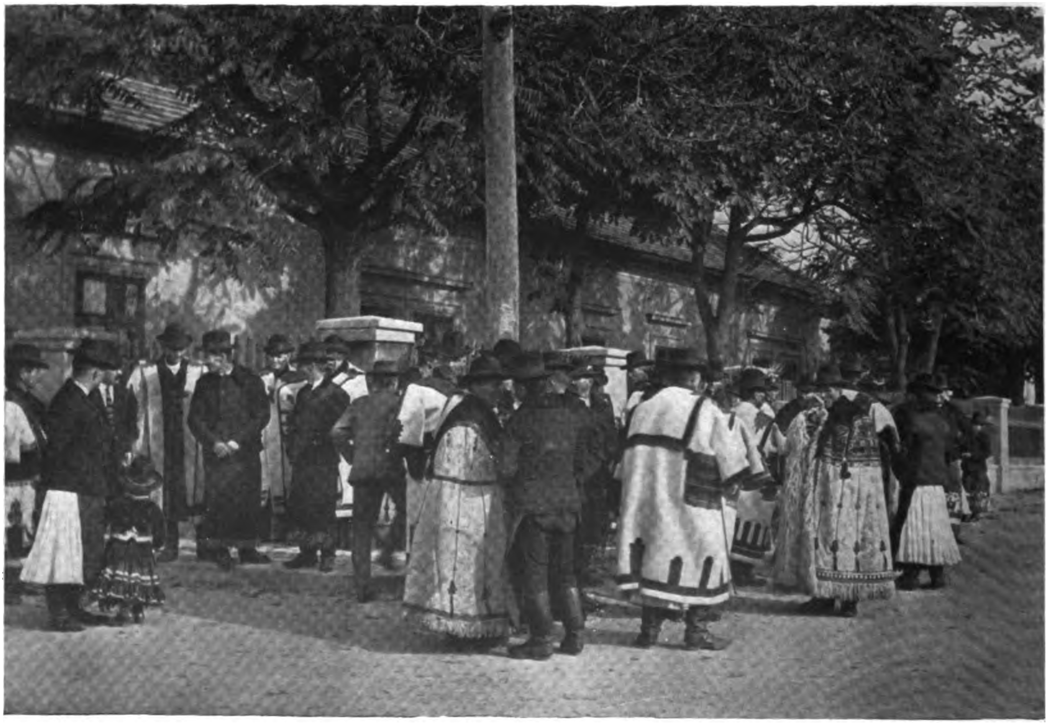
Photo by A. W. Cutler

CORNER IN THE GREAT MONDAY MARKET AT MUNKACS, ON THE BORDER OF HUNGARY, ABOUT 100 MILES FROM LEMBERG, SHOWING SLOVAK MEN AND WOMEN IN THEIR COATS OF SHEEPSKIN

The majority of the people of Hungary are Magyars (see pages 311 and 313). There are about 9,000,000 of this race. There are also about 2,000,000 Germans, 3,000,000 Roumanians, about 3,000,000 Slavs (mainly Slovaks and Servians), and nearly 1,000,000 Jews



SLOVAK WOMEN IN THEIR SHEEPSKIN COATS SEEN IN THE MARKET AT MUNKACS: THE WOMEN IN THIS PICTURE ARE VENDERS OF GRAIN



Photos by A. W. Cutler

STYLES OF OVERCOATS SEEN ON A STREET CORNER IN MEZOKOVESD

Note the Hungarian "skirts" worn by the men on the left and right, and also the costume of the little boy on the left. These are all Magyars

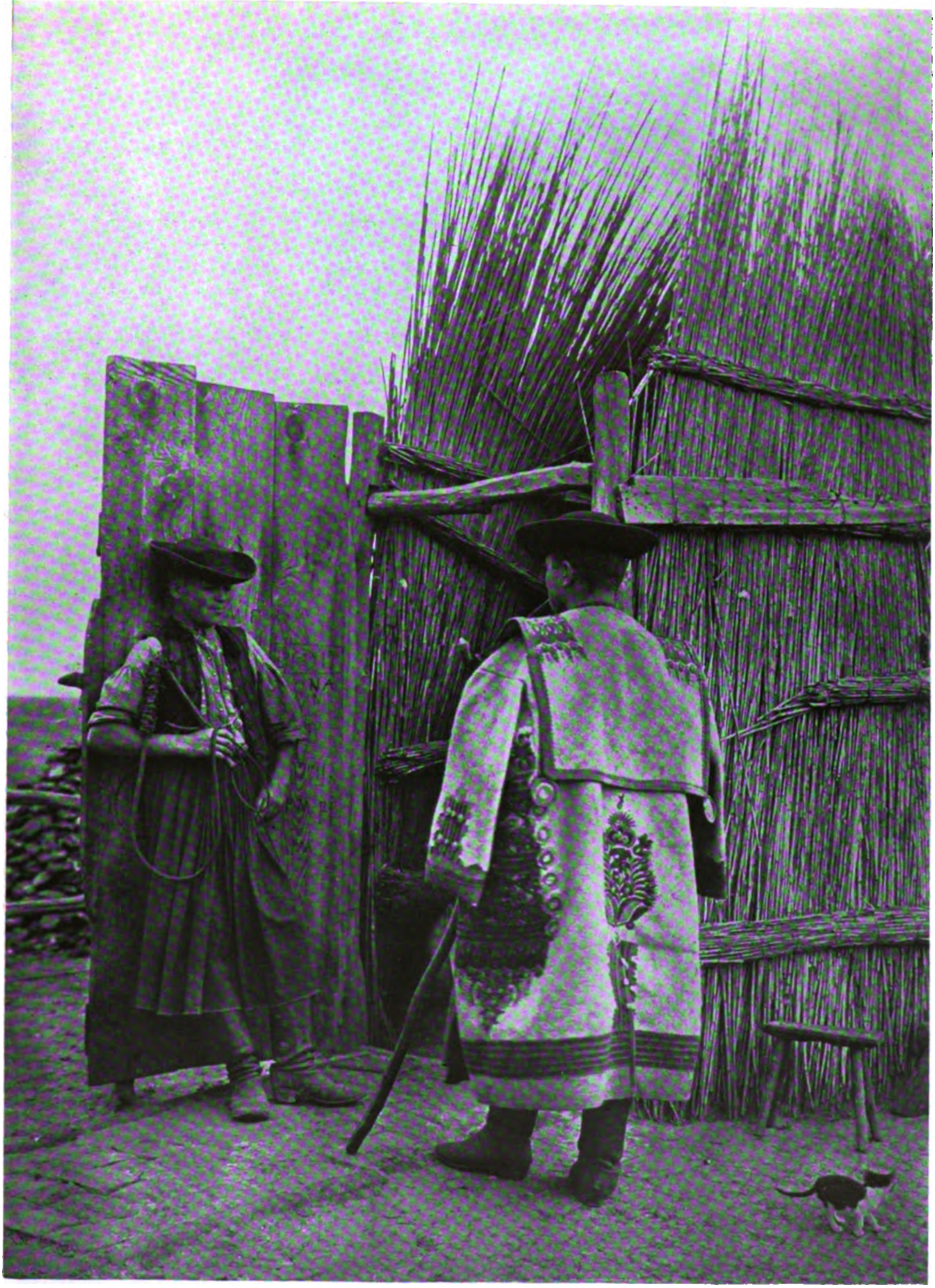


Photo by A. W. Cutler

HUNGARIAN COWBOYS AT THE THRESHOLD OF ONE OF THE CURIOUS CANE SHEDS

The boy on the left takes care of a few swine and cattle belonging to the station, which he keeps in order with the long whip he is holding. The boy is also cook for this station. A striking feature of the overcoat worn by the boy on the right is that the sleeves are never used, the coat being placed loosely over the shoulders and fastened in front by a short leather strap. The large sailor collar, arms, and sides of the coat are ornamented with designs in colored wools. The boy is smoking the typical long Hungarian pipe. All boys and men smoke.

children, winter occupation, the department stands forward spaciously, opulently.

The minister is administrative, executive, even juridical, head of this part of the earth; the interpreter of statutes and the final court of appeal in the legal bearing of certain enactments devised in the agricultural interest.

Rural Hungary, over which the minister thus radiates from his Olympian height, is, moreover, under the joint but informal direction of church and feudal magnate, whose interests are one with those of the State. These interests may be summed up in the universal ban upon the golden calf of Socialism. For the most part, these gods of the fields do not seek tithes and labor only. They have each a genuine desire to see a contented and industrious peasantry always amenable to patriarchal influences.

This is not pure altruism, nor does it consist with Western views; but one cannot translate the old-world peasant small holder into terms of the Blue-Grass farmer. Environment, plane, polity, and economic impulse are at issue. Sober and philosophic liberalism, with true perspective, would desire no other than that this system should prevail at least until such time as the forces of evolution shall have focused the off-shoots of the ecclesiastico-feudal convention. The industrial problem is usually self-contained, susceptible of piecemeal handling. The rural problem is an interlaced immensity, the radical treatment of which would mean chaos.

Upon this system have been grafted various modern institutions, such as the coöperative principle, rural credit, scientific production, and evaluation. Not all of these are of Western origin in principle, for the very feudal institution of *corvée*, now existent in modified form, is itself purely coöperative in practice both as to spirit and intent.

The Magyar peasant thus sees his proximate deity in the Lord of the Manor and his intermediate god in the awful, shadowy form of His Excellency. His life, analyzed, is an orderly succession of Rogation Days and Thanksgiving Days. Physically he belongs to the State; morally he belongs to the church. On the intellectual side he is fortified by a sense of permanent opposition to government in the abstract. For this there is historic justification. For 400 years he squirmed under the heel of despotism. His impressions of government were associated with proscription, oppression, blood and slavery, the violation of his hearth, the sacrilege of his altars, grand seignorial rights and presumption of inferiority at law.

The Saxon thrall was separated by 700 years, but by nothing else, from the Magyar of pre-1848.

The country is this man in the aggregate battling with fierce resentment at the limitations of a soul inarticulate. And so he is a great politician, but his politics, not greatly daring, never get beyond the idea of opposition. This is the Magyar in the true Celtic mood.

At rare intervals his endurance gives way, and he does foolish things blindly or great things epically. But ever at his side, in trouble as in victory, stands that proud and superb church to which the ages owe so much. As long as he can be held she holds him in mild subjection. In epic moments when

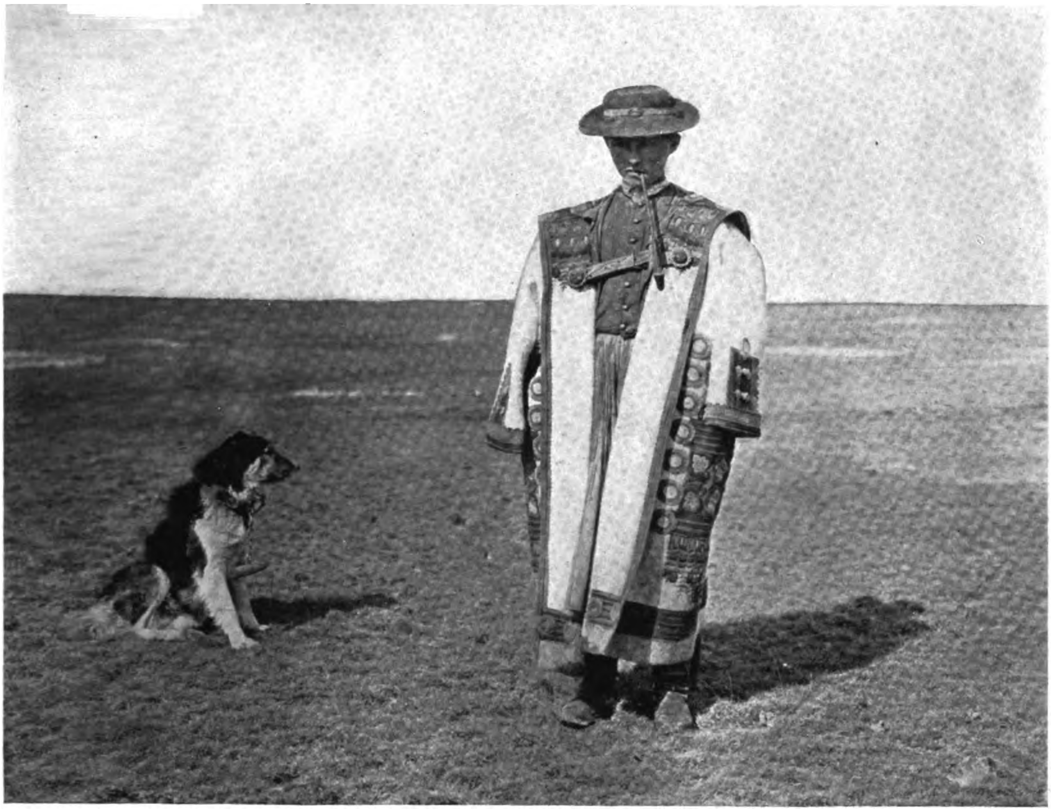
> "Kossuth sees his warriors fall
> And sounds anew the trumpet call,"

she stands aside, not reluctantly, and her ministers go forth with cross and sword to merge the accidental cultus of the good churchmen in the unconquerable psyche of better Magyars. Thus it was in the glorious 1848. The hand which held the cross was atrophied; the hand which held the sword

> "made lightnings in the splendor of the moon."

DANCES AND PETTICOATS

For the rest the peasant labors in the field among the corn and grasses in summer; never comes to the city save in national moments, as when Francis Kossuth was called to his great fathers; votes if he may, but, as the local deity suggests, goes gaily to the colors a lout and comes back a man conscious of manhood, with vision enlarged and virtue engrafted.



THE SHEPHERD AND HIS DOG Photo by A. W. Cutler

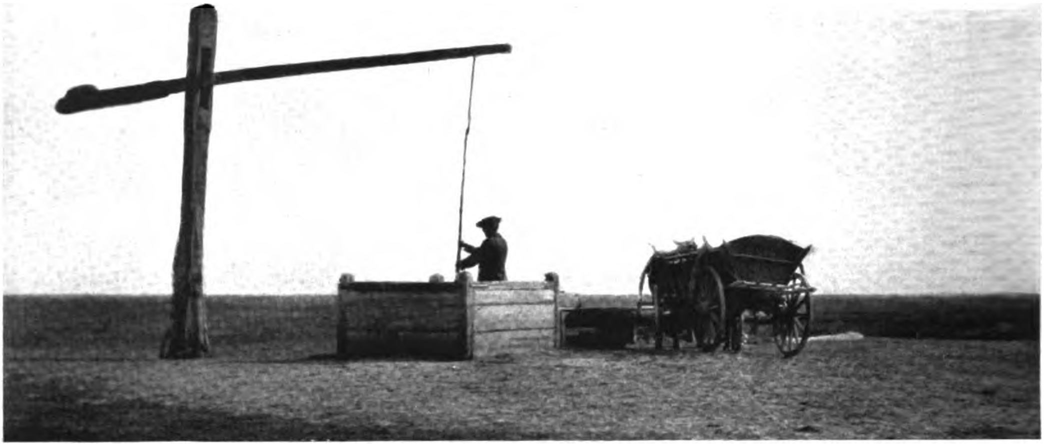
Note the short, thick bit of stick suspended from the dog's neck. It is meant to discourage any tendency to wander off

See him on St. Stephen's Day in picturesque garb, not riotously boisterous, but gay in color and mood. Or see him at a wedding arranged to suit the crops and rather for the convenience of the villagers. Then the festivities last from one to four days. One does not wait for invitation; the going is a matter of courtesy to the bride. One drinks and dances, dances and drinks, sleeps under the table, in the pig-stye, on the grass, anywhere, to rise and dance again. Day or night the music never stops, the wine springs never run dry.

The peasant girl whose consideration depends upon the number of petticoats she can afford to wear—I have seen one with 23—wears the jack-boots, which are family heirlooms, and thus weighted dances till she collapses and revives to dance again (see page 351).

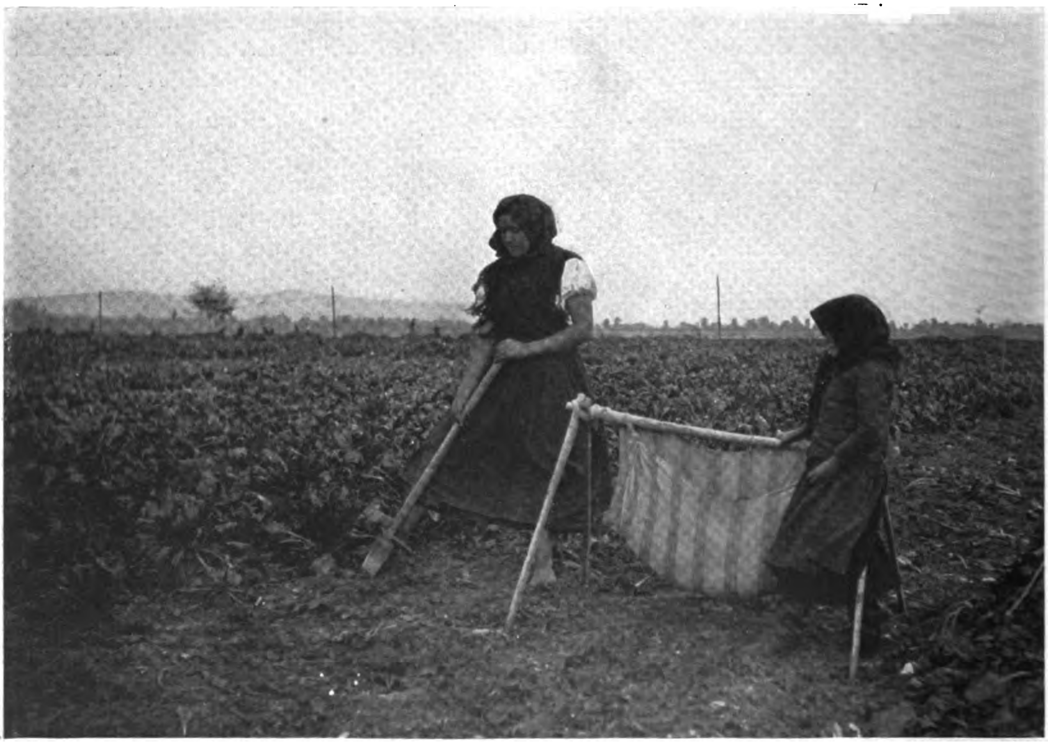
There *are* people who go home to sleep. These are the ladies variously distinguished—among the Slovaks always by a black silk hood—mothers who must resign the necessities of life for its luxuries, the milking of cows, the stilling of the truculent clamor of pigs and ducks. Even these latter have their share of sport and spoil. They wander, especially the pigs, between the feet of the dancers, and if lucky upset them; if luckier still, scuttle off, with memories of missed kicks, in search of provender.

There is always, save at harvest time, dancing on the village green, which revives memories of the May-pole. The music is generally spontaneous and comes from the Gipsies (Czigány), for what Magyar will play when he can dance? At such time he literally buckets in to the mad glory of the Csárdás (Hungarian dances), and there prefigures the national virtue of endurance in two hours of violent and uninterrupted movement. The Csárdás is not for sedentary people,



ONE OF THE NUMEROUS WELLS DOTTED ABOUT THE HORTOBAGY, LOOKING LIKE THE BARE MASTS OF MANY SHIPS ON A BECALMED OCEAN

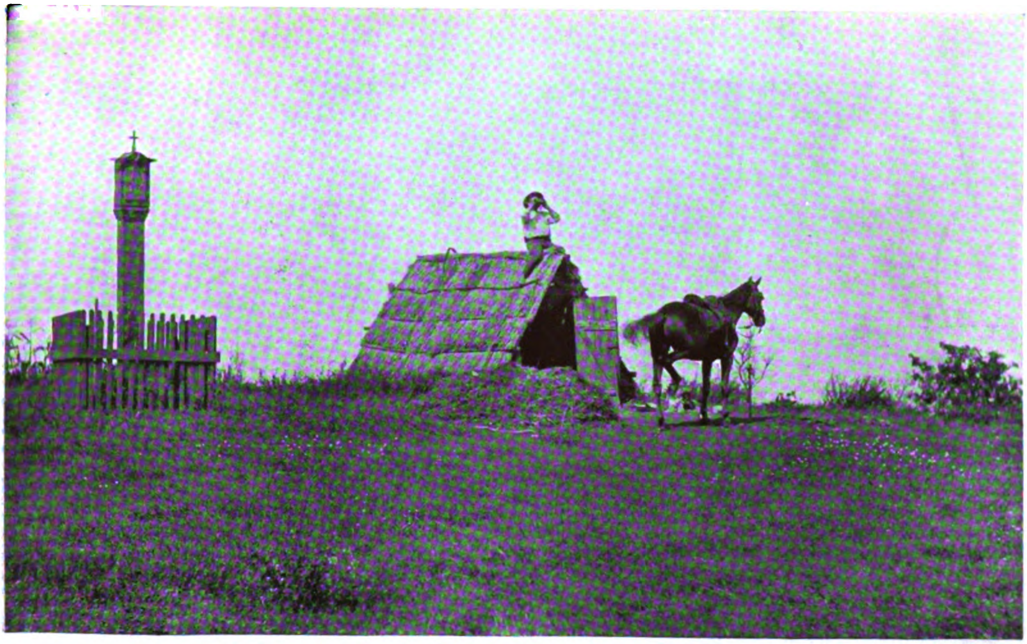
They are in constant use for watering the immense herds of cattle and sheep. A hortobagy cart is seen to the right. The driver is watering his horses



Photos by A. W. Cutler

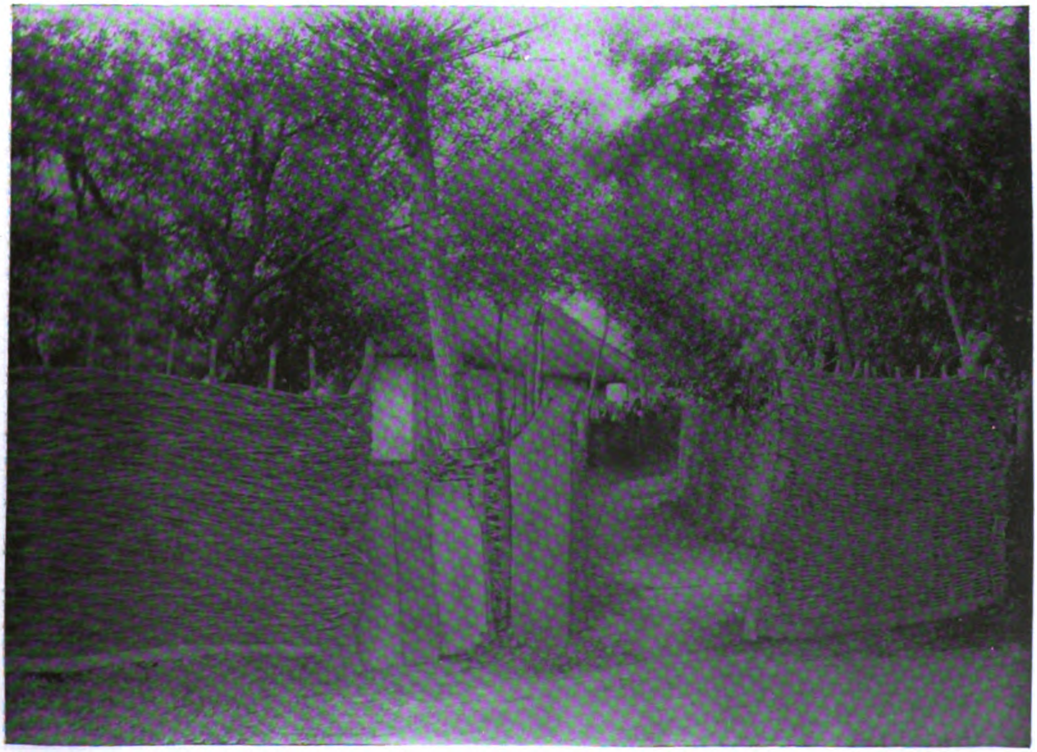
SLOVAK MOTHER WORKING IN A FIELD OF BEET-ROOT

Near by is her baby in a tiny hammock slung across poles. This is very typical of Slovak life, but more often the hammock is slung from a tripod (see page 317)



A WATCHER OF PROPERTY ON A LARGE ESTATE AT SOROKSAR

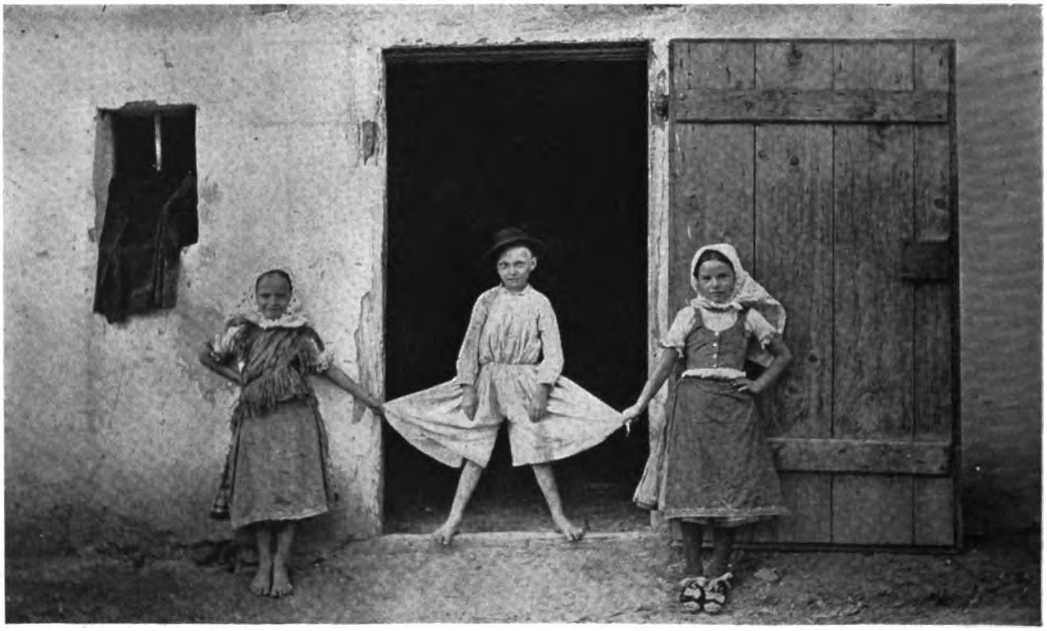
For hours at a time he will sit on the top of this shelter, occupied by his horse, looking for trespassers through a powerful pair of field-glasses. At certain seasons of the year he has to stay here for days at a time. What appears to be a shrine on the left is actually a boundary, or landmark.



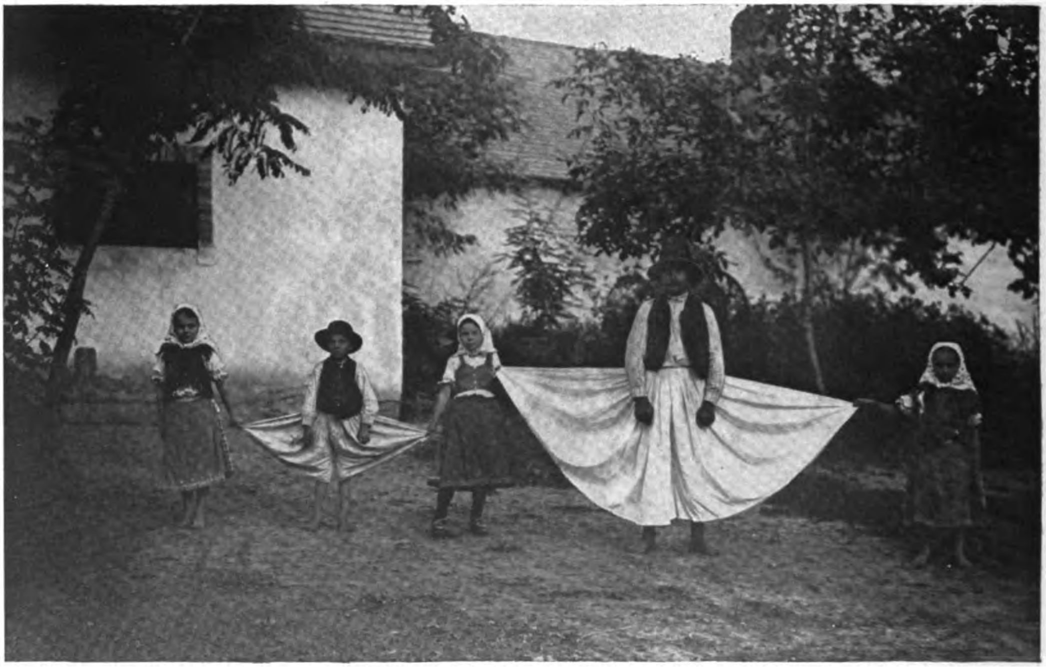
Photos by A. W. Cutler

PECULIAR FENCES OF INTERLACED STICKS SEEN IN AND AROUND THE VILLAGE OF POSTYEN, HUNGARY

Sometimes the orchards are surrounded by these strange fences



THIS SHOWS THE PECULIAR TROUSERS WORN BY HUNGARIAN PEASANT BOYS IN THE VILLAGES AROUND BUDAPEST AND IN THE ALFOLD, OR LOWLANDS



Photos by A. W. Cutler

WHEN A HUNGARIAN BOY GROWS TO BE A MAN HE DISDAINS THE TROUSERS OF HIS YOUTH AND DONS A PAIR SIMILAR TO THOSE WORN BY HIS FATHER ON THE RIGHT OF THIS PICTURE (SEE ALSO PAGE 313)

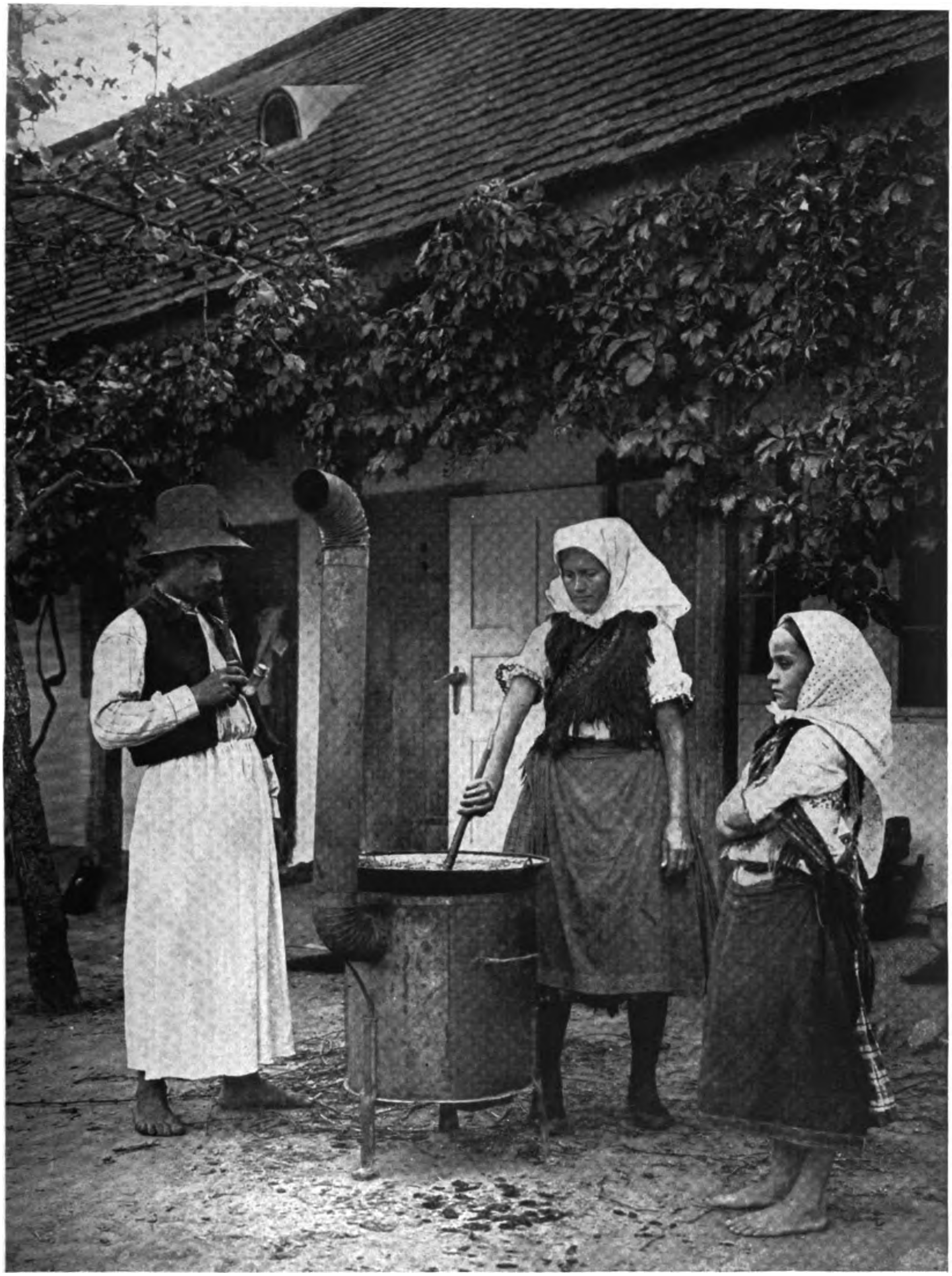


Photo by A. W. Cutler

MAKING PLUM JELLY: QUITE A UNIVERSAL SCENE IN A HUNGARIAN VILLAGE IN FALL

The short sleeves and dress and the shawl about the breast are typical of the women's costume in this section—Czinkota. The man is not wearing a skirt, but cotton trousers, so very wide and loose that they hang like a skirt (see pages 313 and 338).

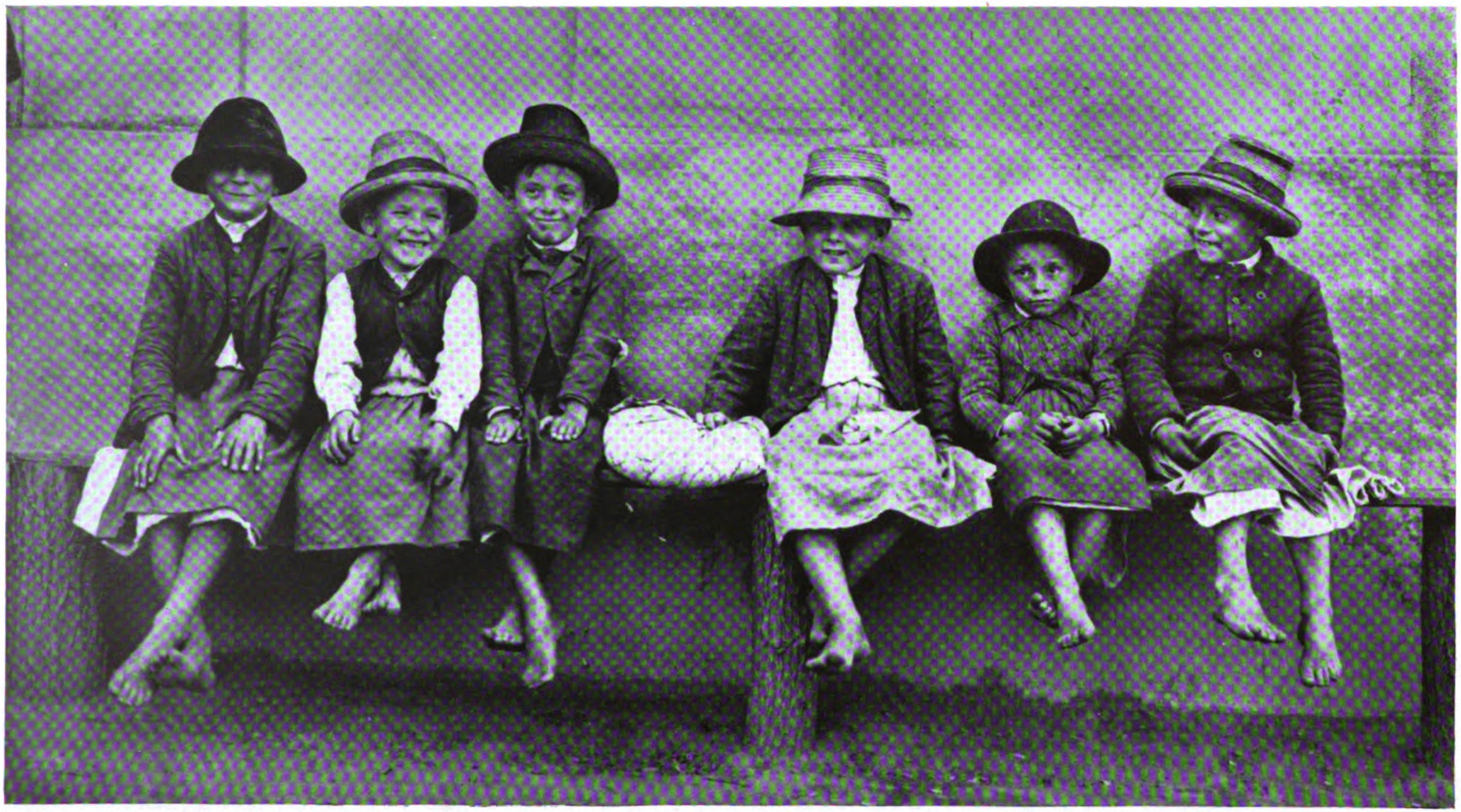


Photo by A. W. Cutler

"BIRDS OF A FEATHER": HUNGARIAN BOYS TAKEN AT THE VILLAGE OF MIKE-PERCS (PRONOUNCED MEEKA PAIRKS), NEAR DEBRECZEN

All these boys wear the same kind of trousers shown on the previous page, but here they are covered with aprons. It is all around Debreczen that the thoroughbred Hungarians may be found

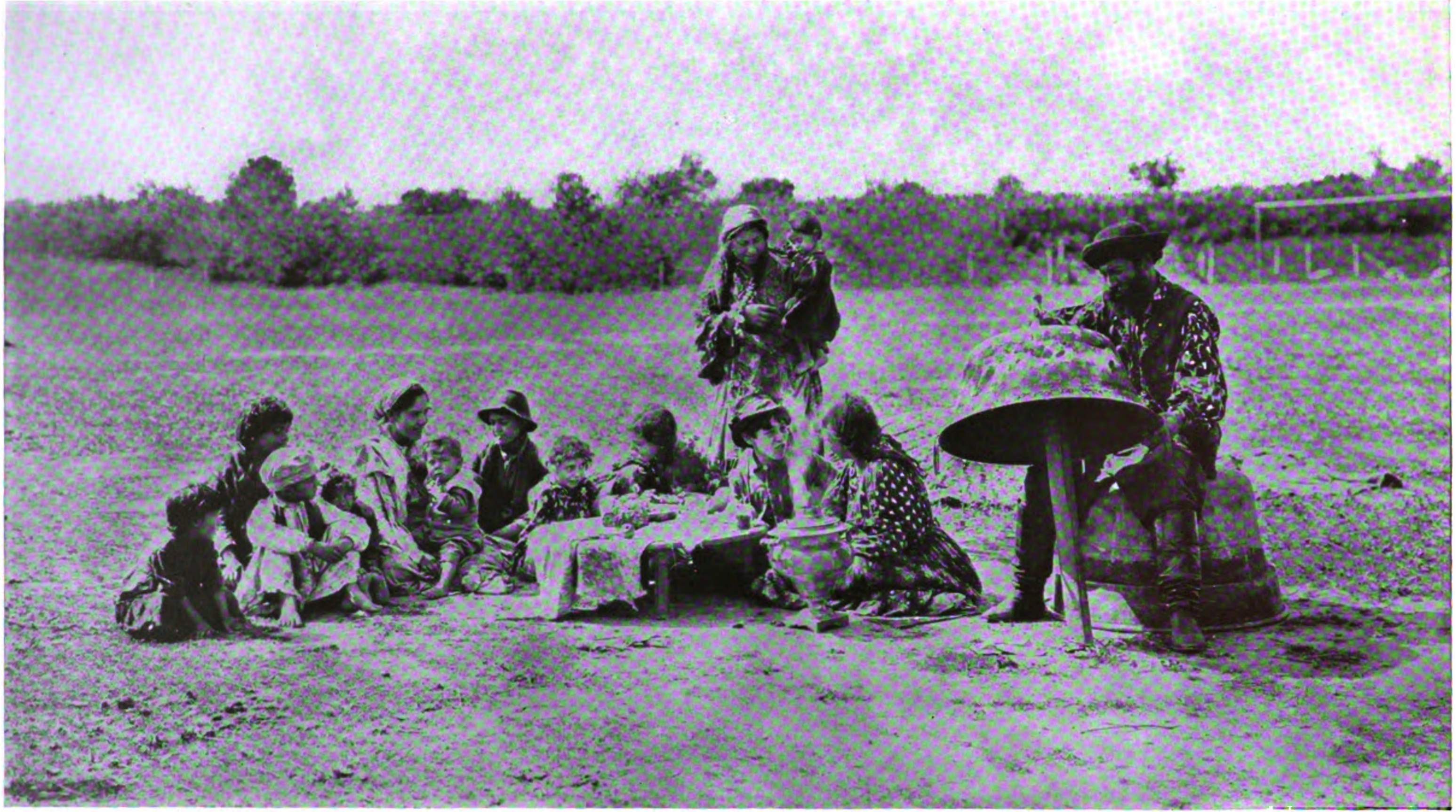


Photo by A. W. Cutler

HUNGARIAN GIPSIES ABOUT TO PARTAKE OF THE EVENING MEAL: THE MAN IS MENDING ONE OF THE HUGE POTS USED BY THE NATIVES WHEN MAKING JAM OR JELLY (SEE PAGE 339)

TROOPS OF HUNGARIAN GIPSIES

Photo by A. W. Cutler

They are an exceedingly hardy race of people, rarely, if ever, sick, and the children may frequently be seen quite naked, even when the weather is cold

THE HUNGARIAN GIPSY

That natural music which finds its home in the Magyar soul finds its interpreter to an alien world in the Magyar Czigány (Gipsy). The Czigány himself is music embodied; he was born in the purple, but apart from his rôle he has nothing in common with a true Magyar. The Czigány is a Hungarian in nothing but name. His affinities lie rather with the Romany of Andalusia or Poland than with Gentile peoples. But a Czigány born among a people whose poetry, whose language, whose whole emotional environment is a succession of chords must needs obey the law of natural selection. Each has his special forte. Each is the proper complement of the other. The Czigány is no singer, no creator of the songs that live; the Magyar is no interpreter. But between them they embrace all of the nature and much of the poetry of music.

Not only are the Magyar songs and the music distinctively national, but one or two of the instruments which serve their truest expression are known to no other peoples. One indeed is so ancient that for centuries it was to the mere layman as rare as the purples of Tyre.

But now, after three centuries, the tárogató, once played by national bards in Angevin camps, has come to light and being. It would appear to be an instrument of the clarinet family, singularly soft, singularly sweet, singularly fitted for the interpretation of the sad, retrospective musing which, however it be disguised by a gaiety half affected, is still

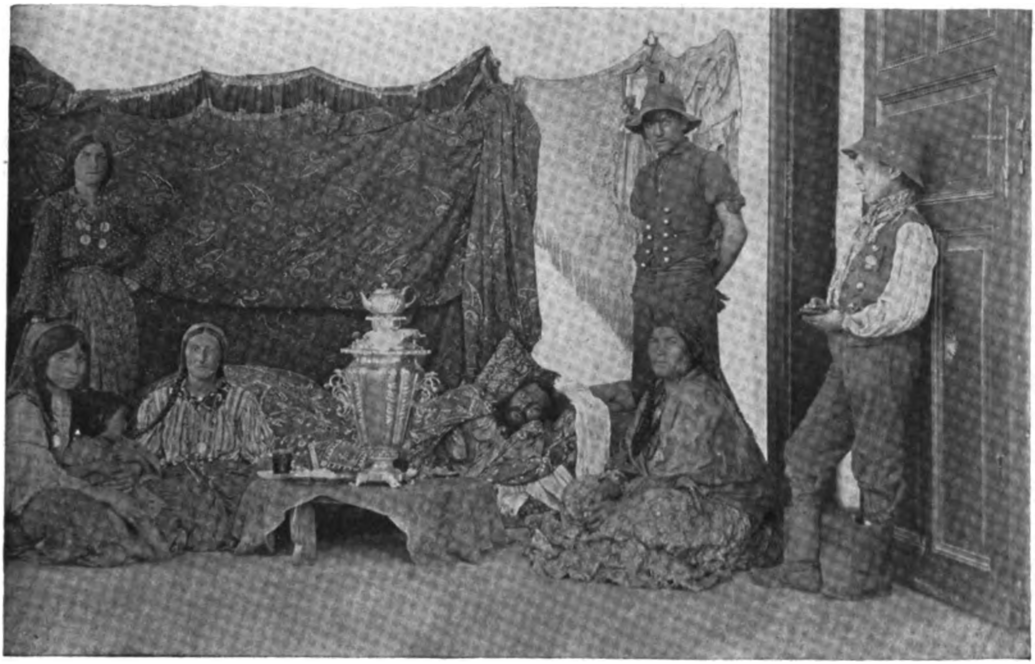


Photo by A. W. Cutler

RICH HUNGARIAN GIPSIES VERY COMFORTABLY ENCAMPED ON THE VERANDA OF A HOUSE AT THE VILLAGE OF SOROKSAR, HUNGARY

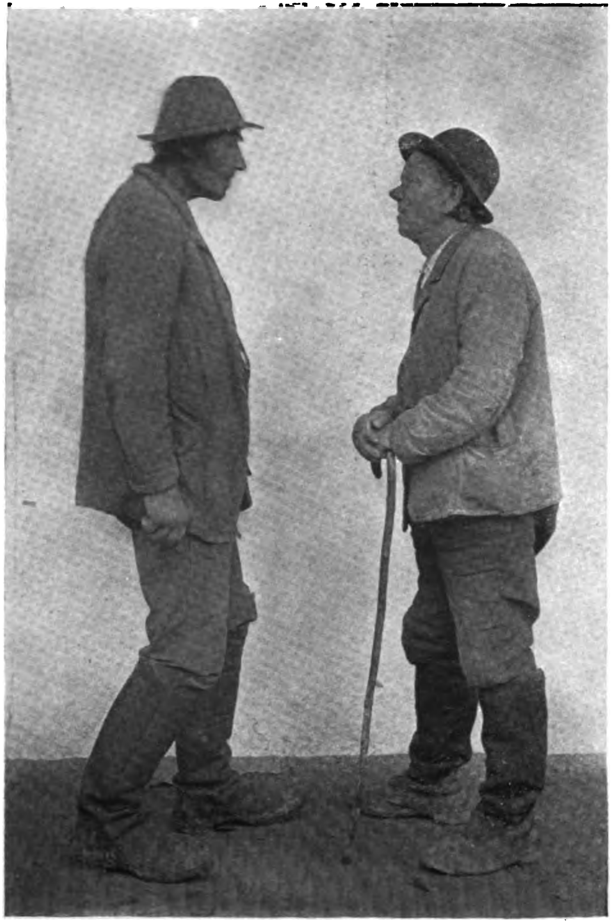
On account of their thieving propensities, they are never allowed in the towns, and only in villages for a period of two days. This vacant house had been rented for the time. They go about the country mending pots and pans and "annexing" anything they can lay their hands on. There are some 200,000 Gipsies in Hungary, and they are looked upon universally as a most dangerous community—not without good reason. The urn on the table and the tea-pot is silver. These round, low tables are always used by the Gipsies, and the draperies on the walls are also typical. The woman standing up on the left is wearing a necklace of large silver coins. The man lying down is lounging on some of the immense pillows always carried.

the true index and key-note of the Magyar character.

Given one or two violins, one or two Czigány taken at hazard, with a cimbalom and an "atmosphere"—without which no *primás* could do himself justice—and you have the light of the Magyar world, about which flutters every little moth within trumpet call. Place does not matter. Time was made for the restless Briton. In a moment the listeners are in Dreamland. The air may be sad and plaintive; it may be the day-dream of the swarthy improvisator lost, for the moment, to all earthly things—the mournful song of the Ishmael race. *His* thoughts are with some Hagar of the wilderness, but where are those of his entranced devotees? On the Field of Blood, in sleepy old Buda; in the sepulcher of Mohács (the battlefield against the Turks); wherever a rough destiny has led their long-suffering people.

Anon the dream is dead and the time changes. The primás, with glistening eyes and a set smile, breaks into the mad whirl of the Csárdás. The peasants dance for hours and hours, but in the end it is they who are exhausted, never the figures. Faster and faster, fast as bow can travel, to the noisy accompaniment of moving feet, this insanity of melody pours forth until one or other, performer or audience, is overcome. The dance ends as abruptly as it began.

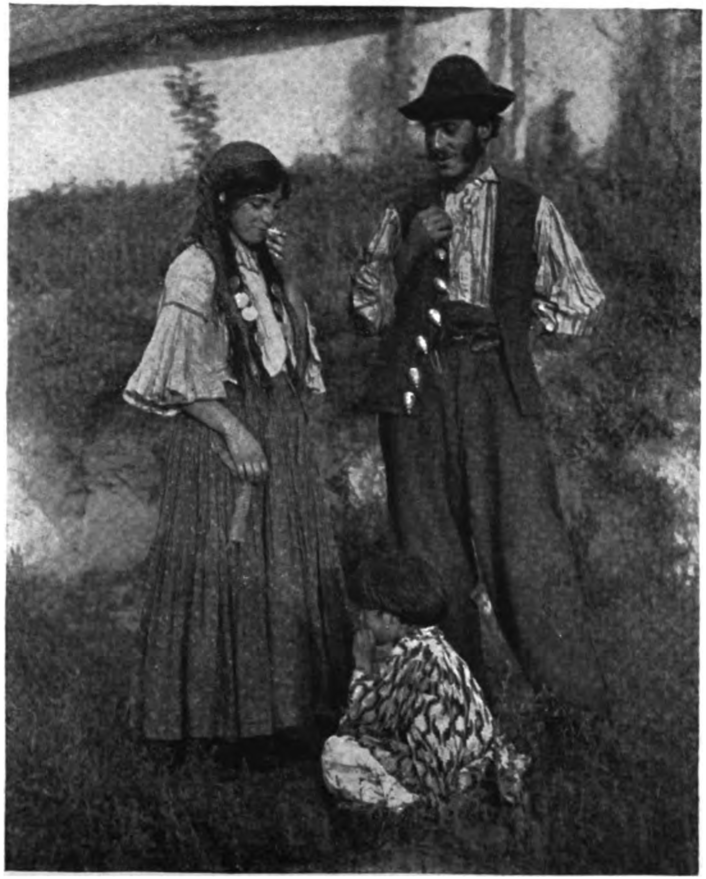
Nothing is then too good for the primás. If in the city, money and champagne, even caresses, the "bravas" of scores of people intoxicated with coffee and music, go out to him. He is again, as his forefathers were before him, lord of a thousand camels and master of des-



"SAY THAT AGEN AND I'LL KNOCK YER BLOCK OFF"

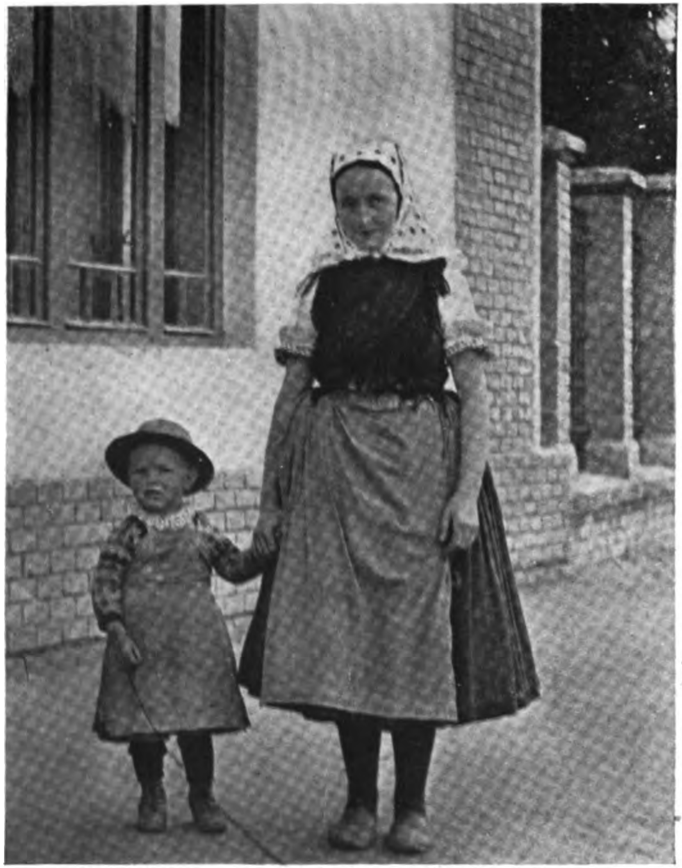
Two bellicose-looking men (Slovaks) snapped by the camera man

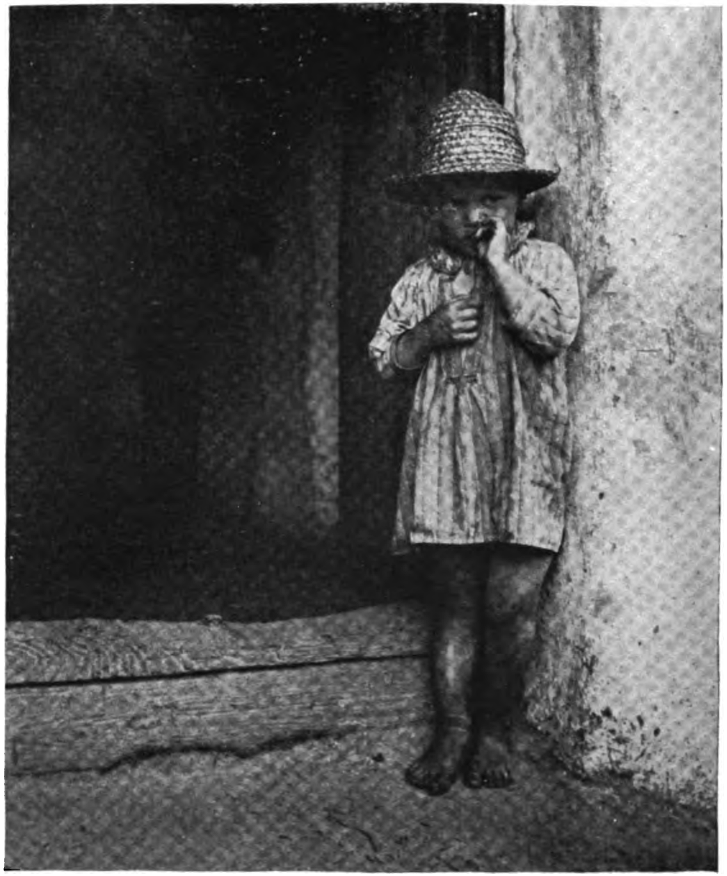
Photos by A. W. Cutler



HUNGARIAN GYPSIES: FATHER, MOTHER, AND CHILD

Note the necklace of large silver coins around the neck of the girl, which, however, seems quite insignificant alongside the immense solid silver buttons on the man's waistcoat.





Photos by A. W. Cutler

A WAYSIDE SCENE AT CZINKOTA

These peasants are very clean and extremely kind and hospitable to strangers. Many petticoats are a feature of the costume, giving the women a very rounded appearance. The short sleeves and dress are also notable.

THE TROUSERLESS AGE

A little boy snapped at the threshold of his home at Banka, Hungary

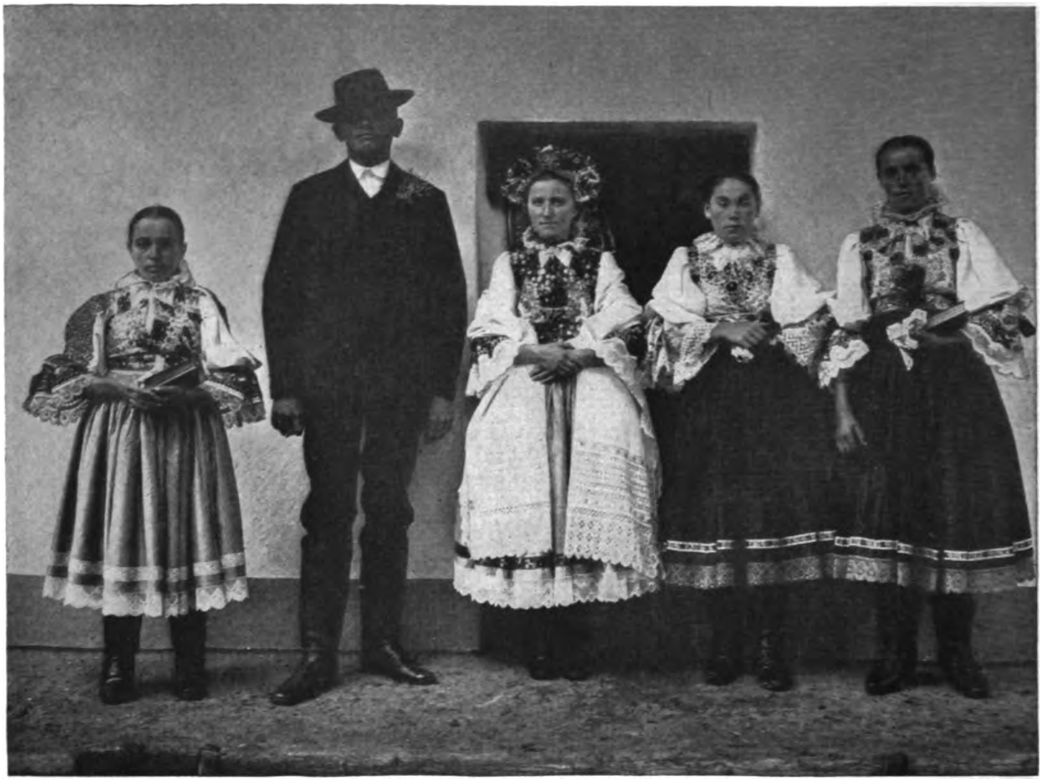


Photo by A. W. Cutler

SLOVAK MARRIAGE: THE HAPPY COUPLE WERE ON THE POINT OF GOING TO THE CHURCH FOR THE CEREMONY

The girl on the left and the two on the right are the bridesmaids, each wearing many petticoats

tinies not his own. Whilst he lives he is a demigod, and when he dies thousands go out to attend him as they did the primas Munczi, who left a million in money and a memory lasting as memories go.

As for the peasant, one thing only can come between him and his gaieties. On Sunday morning, with no trace of the glorious carouse, but with every trace of deep and still reverence, he listens to the man of God—a simple priest who could have walked out of the pages of Goldsmith's "loveliest village of the plain"—listens, with a full sense of the reality of things, humbly, penitently, to the fatherly, reproving voice, and in the afternoon forgets.

BUDAPEST THE BEAUTIFUL

"O, thou art fairer than the evening air,
Clad in the beauty of a thousand stars."

A moon serene, untroubled, set in the steadfast blue; stars fainting in a clear sky; the steady flow of the broad river; lights, shadows, and—save for the tinkle of tram-bells and the sound of water, the wash of some passing ship, softly "lapping on the crag"—silence. It is such a night as Byron would have loved.

Dark against the background and clear rise those hills whence, centuries ago, the Pagan Magyar hurled his martyr saint into the great river.

"Falls the red sunbeam on the Hills of Buda,
Light of the Kings that dwelt of old in Asia
And drew the rude *Te Deums* of the Magyar.

Old, old, and ever old, the Hills of Buda,
Clear as the crystal justice of dead Matyas,
Brooding upon the lovely land of Árpád.

The spirits of dead yesterdays breathe o'er them,
Phantoms of worlds that have been, songs elusive,
There where the Gods dwelt—on the Hills of Buda."

From the villas on the hills, from the wondrous palace, from old Buda that knew the Thund'ring Legion, as far as eye can reach, past the Moorish Temple, from the Bastion by Matyas to the turn of the stream, a myriad lights ceaselessly twinkle.

He who has sailed past the Isle of Roses to the noble harbor on the Parramatta,* who has cast anchor under Vesuvius, who has seen the fair places of the earth from the Golden Horn to the Golden Gate, from Kiev to Rio, may bid them hush their rivalries, for when twilight has deepened, when the full moon is rising in the blue velvet over Buda, the loveliest panorama of them all slowly unfolds. The gems are the gems of old, but the setting is new.

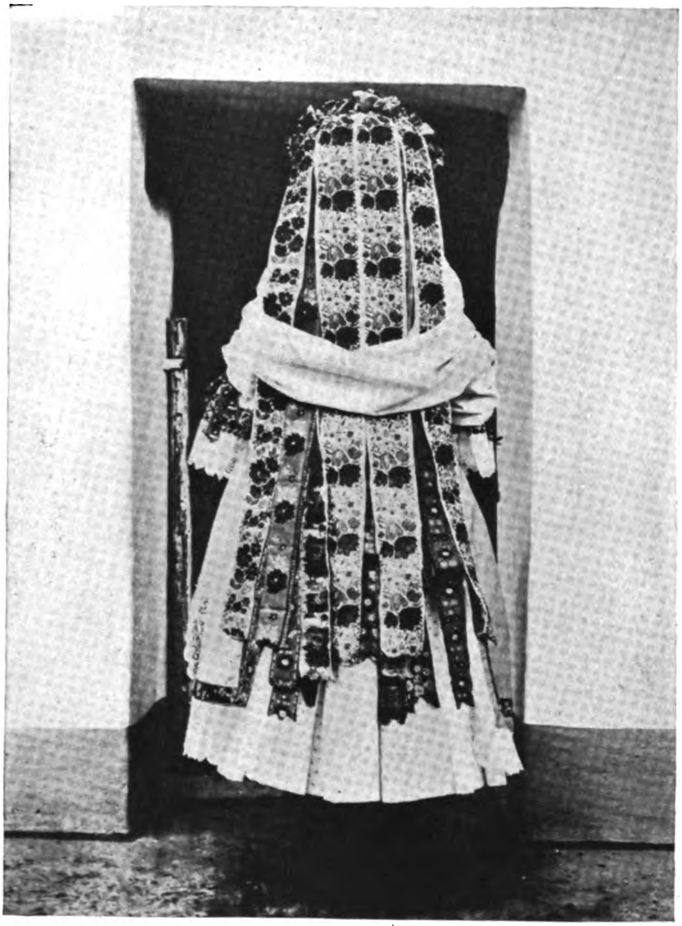


Photo by A. W. Cutler

THE BACK OF THE BRIDE SEEN IN THE PRECEDING PHOTOGRAPH: A MASS OF GORGEOUSLY COLORED RIBBONS

At first glance it appears to be some rare beetle of colossal dimensions. The loose girdle around the waist is of white cotton.

You are standing on the Corso, in Asia. Cross over, climb the hill upon the other side; stand upon the walls of a dismantled fortress, where stood the merciless Austrian in 1849; now look down upon the changeless river, moving, as since the dawn of history it has moved, the warder on the confines of two worlds. Here was the Gate of the West. Beyond the eagles never flew, the legions never watched, the word of Cæsar never passed. A thousand years go by; the Pannonian Legion is no more; the *Colonia* of Aquincum is "one with Nineveh and Tyre"; all else has changed, but the Gate remains. Now it is the outpost of Islam, and the Buda Hills form the watch-tower of Christendom. It is here, not at Lepanto, that the Crescent wanes when, for the third time in history, two civilizations contend for the ages to be.

Look out now to the low-lying Margaret Isle; look behind, far into the night, upon the verge of illimitable plains; look upon the spires and domes, the towers and minarets, of the Grenada of the North; look where you will, the thought that this is still, as ever, the debatable land is ever more insistent. Here it is that the well-nigh irresistible force, an atavistic cultus, breaking back upon the path of the rising sun, has come upon the well-nigh immovable body—the passionless, dreamy fatalism of the Orient.

---

* Sydney, Australia.

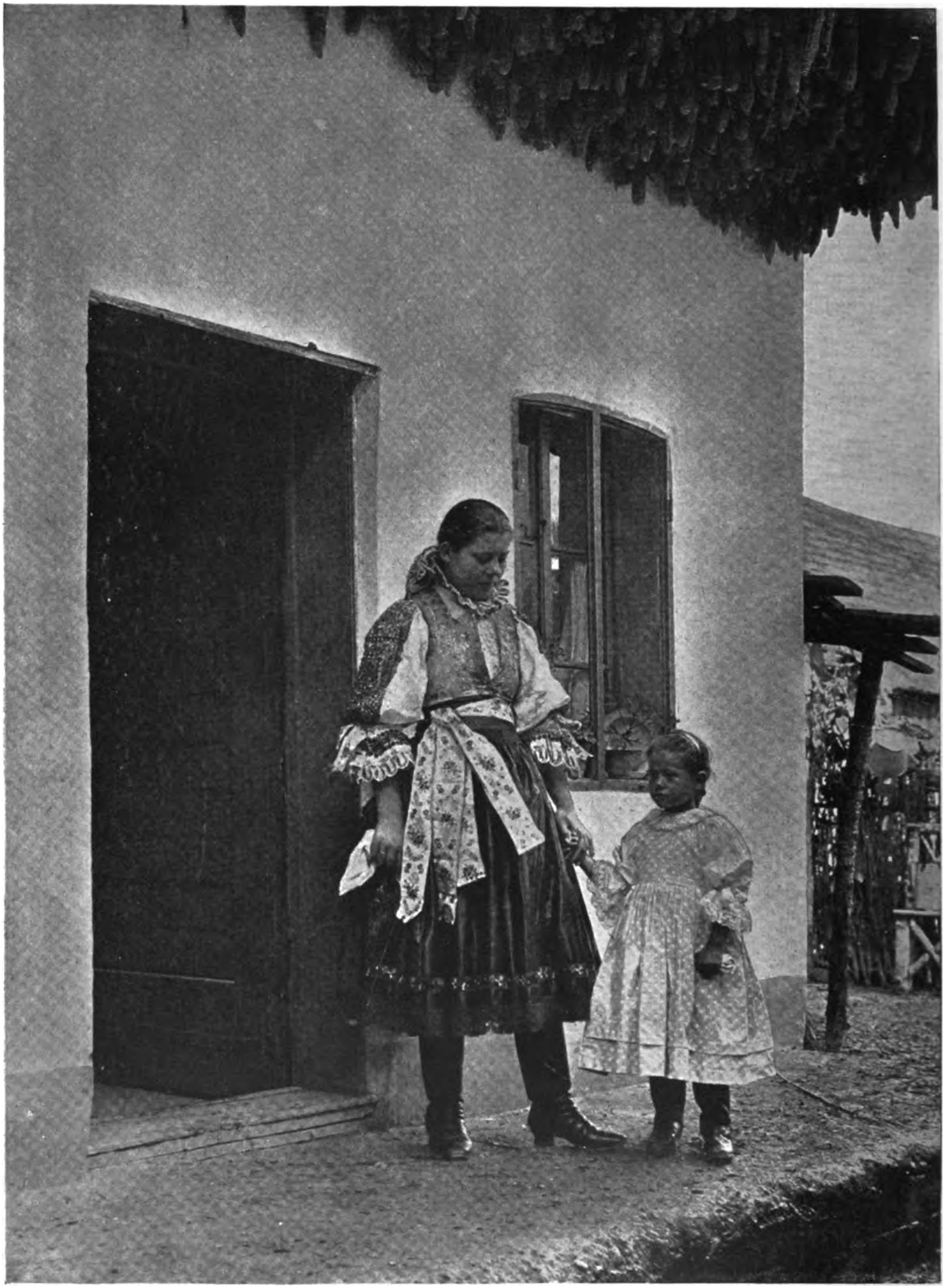


Photo by A. W. Cutler

A MOTHER AND HER LITTLE CHILD: POSTYEN, HUNGARY

Note that the little girl wears long Wellington boots, too, while mamma's ribbons are much in evidence. The former has also an apron, but this picture being taken on Monday, the apron was quite naturally in the wash. Over the entrance numerous cobs of corn are seen drying. Later on the chickens will get these.

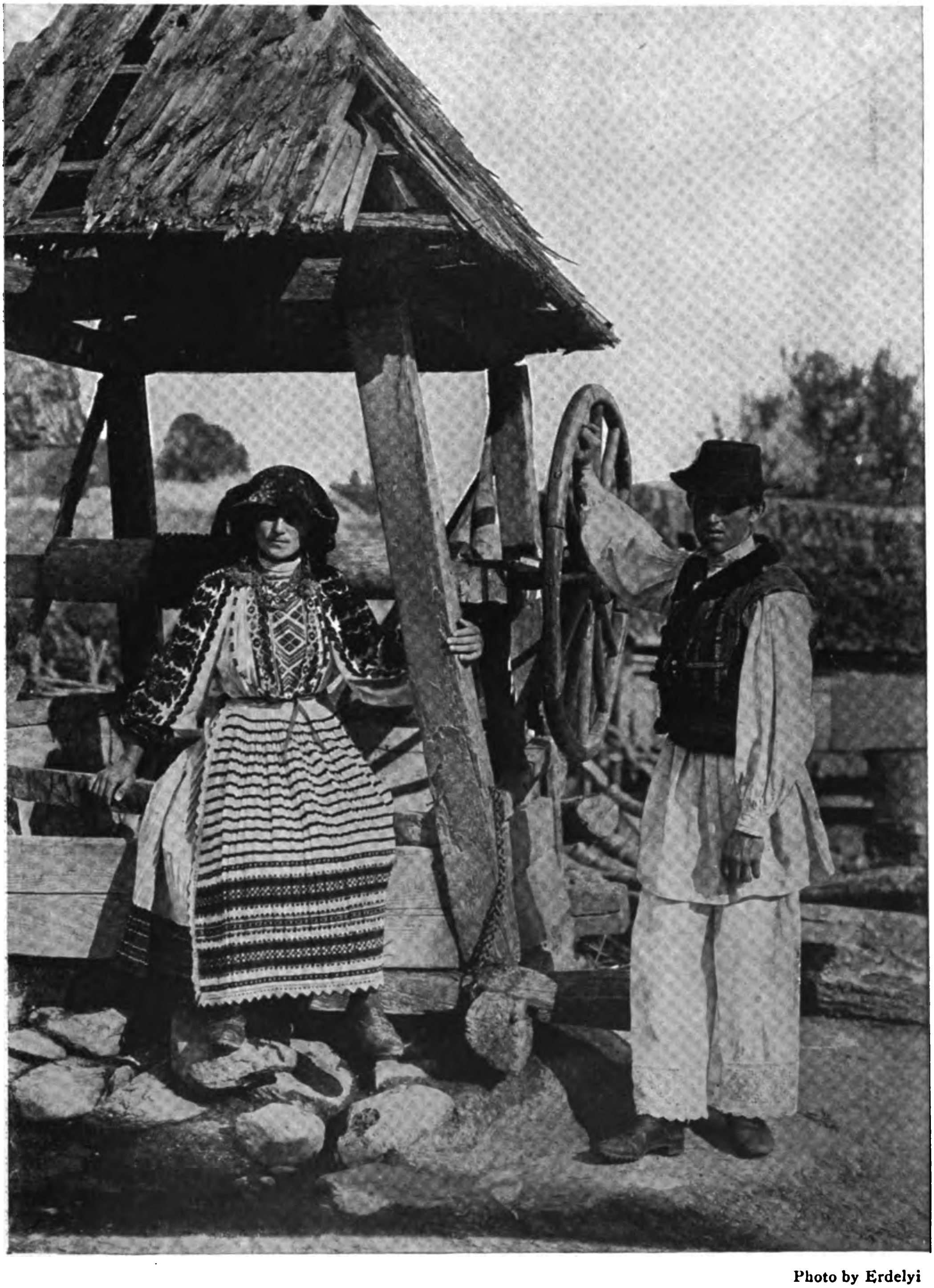
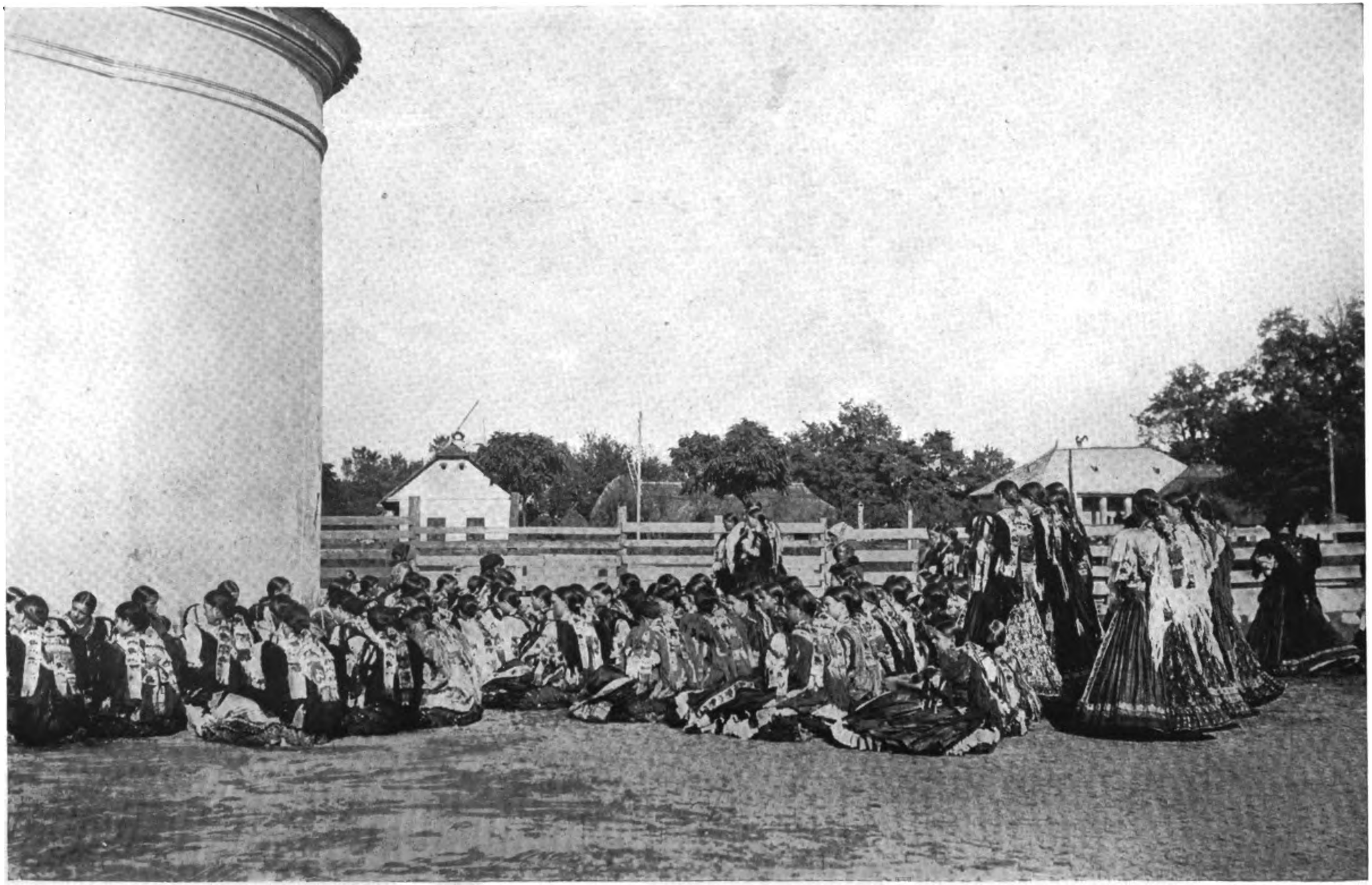


Photo by Erdelyi

A PEASANT COUPLE IN SOUTH HUNGARY, NEAR BOSNIA: THESE ARE CROATS

The girl is wearing a gorgeously embroidered dress. Note the lace adorning the trousers of her beau



SUNDAY MORNING SCENE OUTSIDE THE CHURCH AT MEZOKOVESD, HUNGARY Photo by A. W. Cutler

The Magyars are very devout, and the church, being small, cannot hold all who come. Those who come late and cannot find room inside invariably take part in the service outside, kneeling on the ground, even when it is wet and muddy

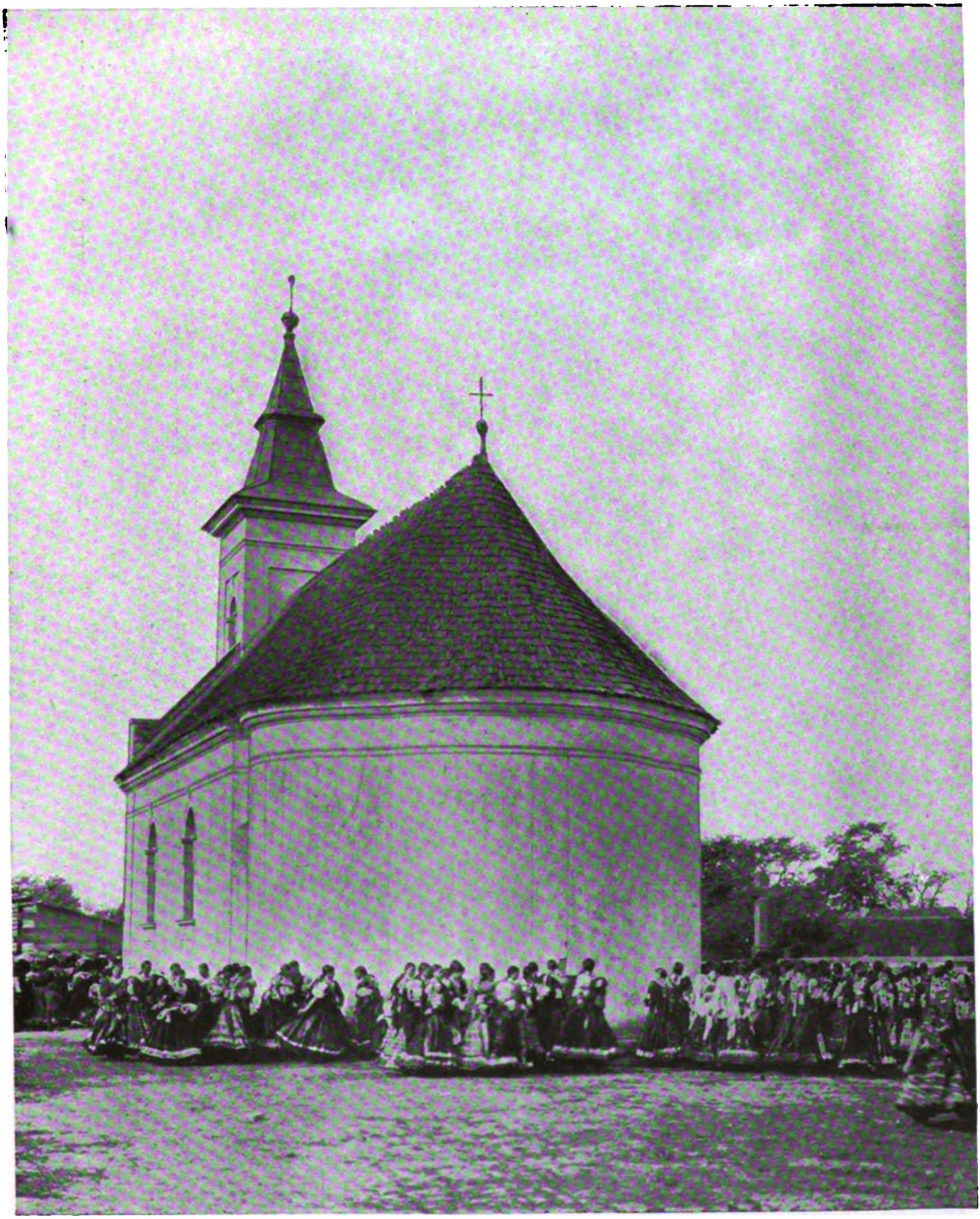
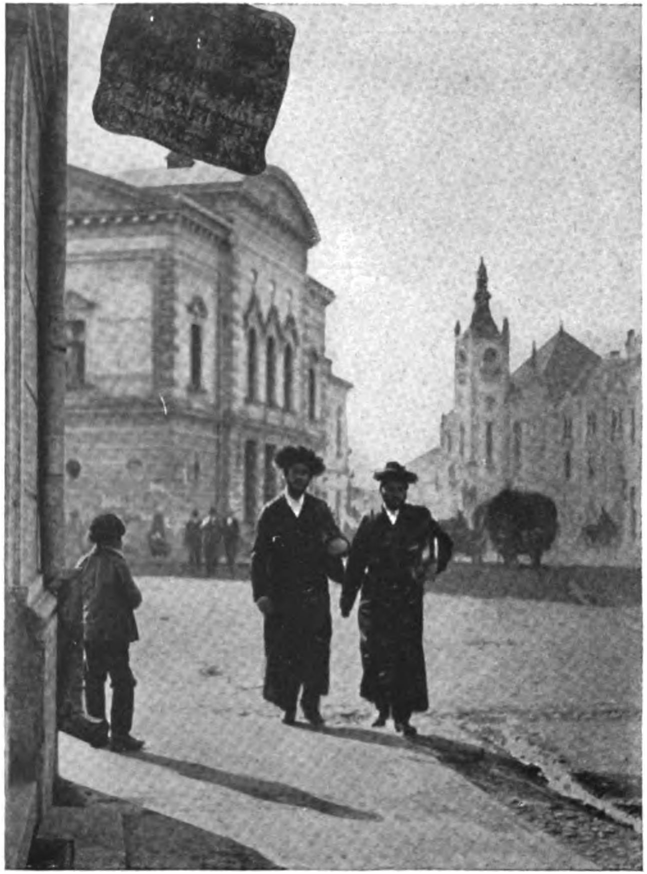


Photo by A. W. Cutler

SUNDAY MORNING SCENE OUTSIDE THE LITTLE CHURCH AT MEZOKOVESD: THE GIRLS ARE NOT WEARING HOOP-SKIRTS, BUT MANY PETTICOATS

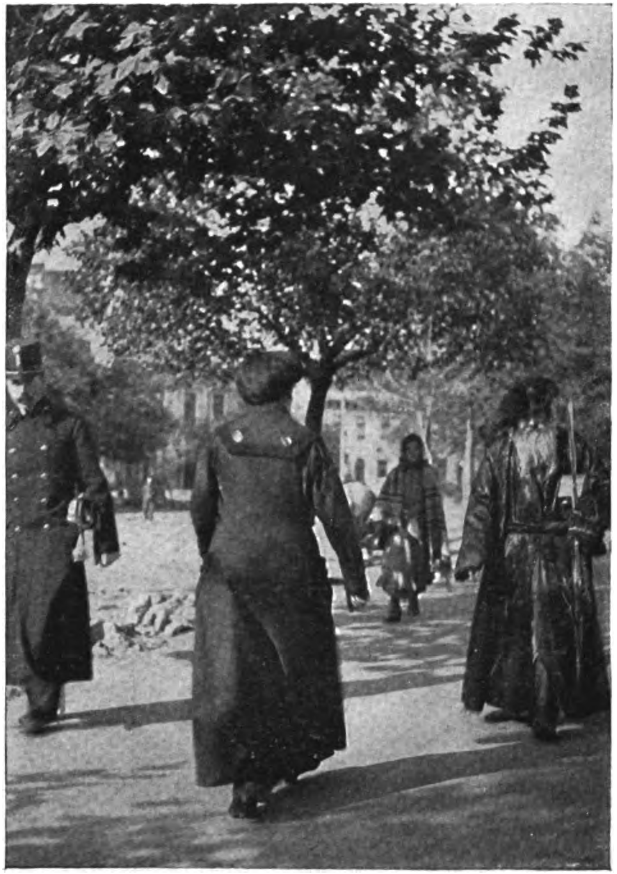
EVENING PASTIMES

It is 10 o'clock in Budapest. Theaters and opera, music halls and cafés, restaurants, chantans, and casinos are packed, for the serious business of the day has begun. To find an empty place one must go into the brilliantly lighted streets or go home. From now until long after the dawn has broken over Buda fortress, on the other side, the easy-



TWO HUNGARIAN JEWS

The long black gowns and round fur caps are typical



Photos by A. W. Cutler

TWO BIRDS WITH ONE STONE: ON THE RIGHT IS THE MAN I WAS AFTER; ON THE LEFT THE MAN WHO WAS AFTER ME

I was looked upon as a spy at Munkacs. My cameras were confiscated by the police department, but returned early on the morning of the third day. I was, however, politely requested to leave town by the 4.30 p. m. train—the next train. The officer seen on the left of this photo was detailed off to watch my every movement until I left town. Meantime, however, I was permitted to take photographs, and this is one of them.

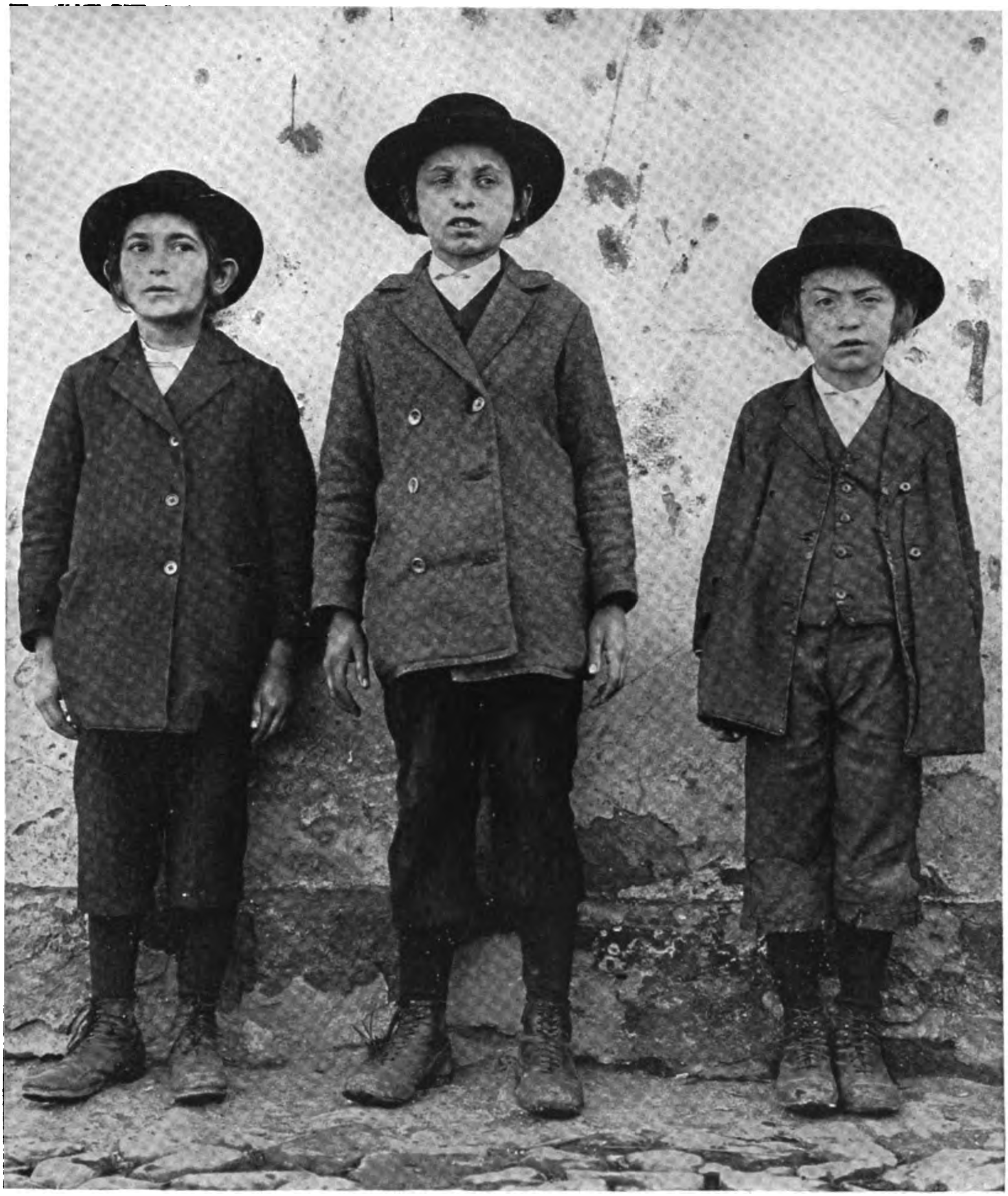


Photo by A. W. Cutler

THREE LITTLE JEWS, MUNKACS SCHOOLBOYS: HUNGARY

They were persuaded to stand for their pictures only after considerable difficulty. The older boys, and especially the men, could not be induced to stand for love or money. Note the curious tags of hair on either side of cheek; this is the fashion among young and old.

going, improvident Magyar of the city is immersed in affairs which will not wait.

He who never goes to bed and gets up at seven in the morning; never has money and spends it royally; never puts off till tomorrow what he hopes some one may be induced to do for him next week; whose ideas of time are rather Oriental than Central European; who makes haste, in other matters, with caution and forebodings, is guilty of much, but never of neglecting his urgent private affairs.

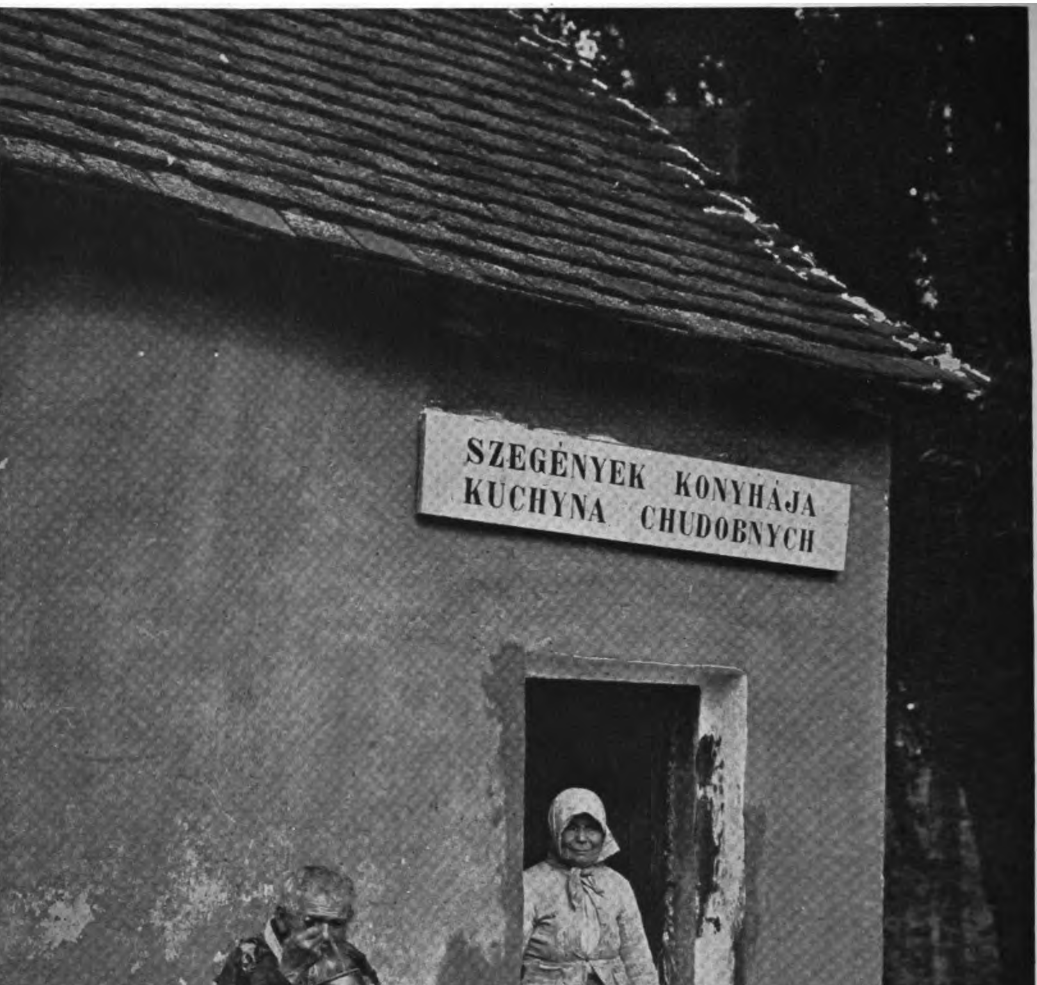

SZEGÉNYEK KONYHÁJA
KUCHYNA CHUDOBNYCH

Photo by A. W. Cutler

A POOR PEOPLE'S KITCHEN AT THE VILLAGE OF MORAVAN, HUNGARY, INHABITED BY SLOVAKS

Aged poor people may often get a free meal here. The food is donated to the kitchen by wealthier citizens. The two top words represent the name of the woman who runs the kitchen; the two lower words, "poor people's kitchen," in Slovak and Hungarian.

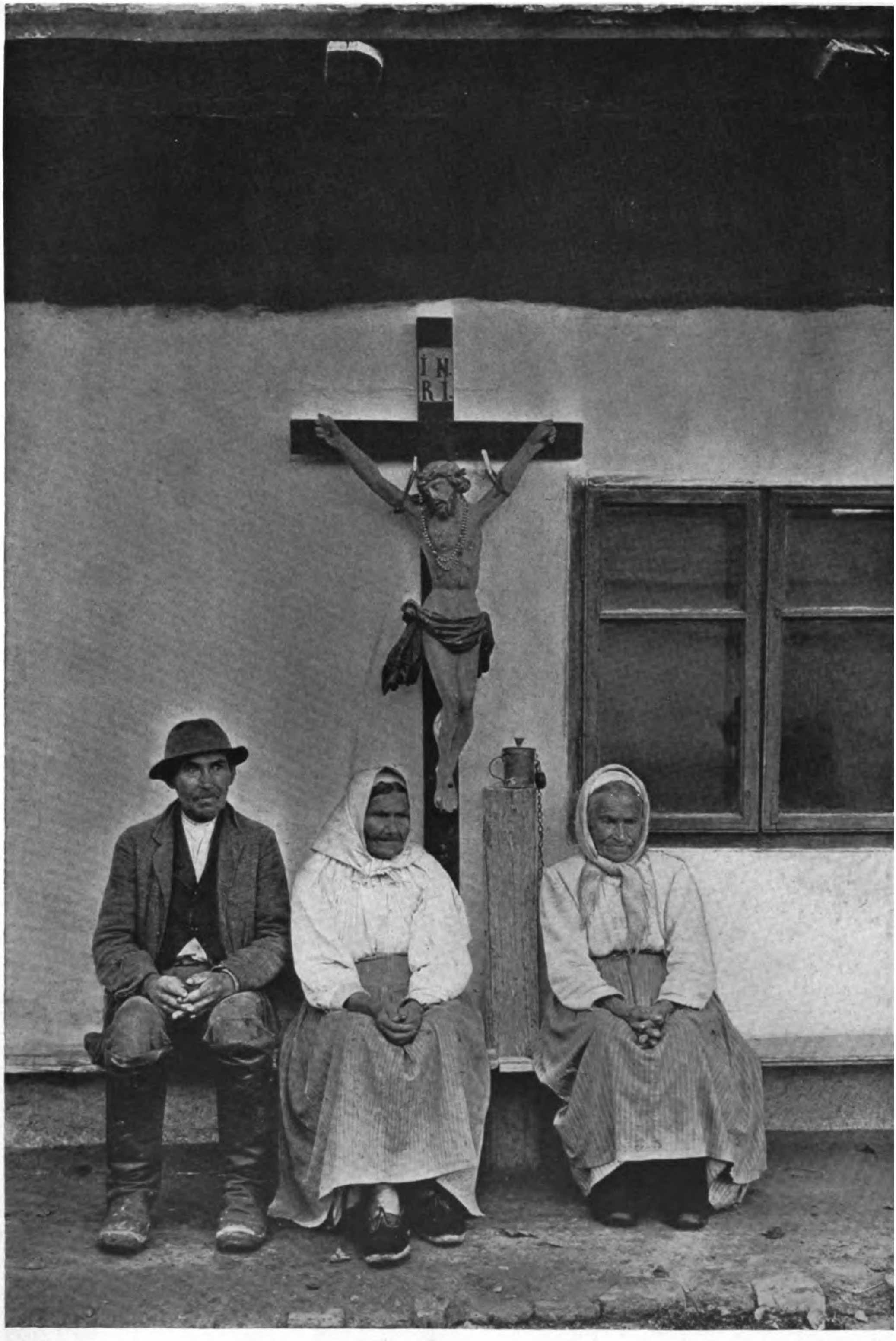


Photo by A. W. Cutle

THREE OF THE INMATES OF A HOME FOR THE AGED AT POSTYEN, HUNGARY

They are supported entirely by voluntary contributions of food and money. The house fronts on the highway, and these old ladies are constantly on the lookout for passers-by, whom they persuade to put something in the box beneath the crucifix.

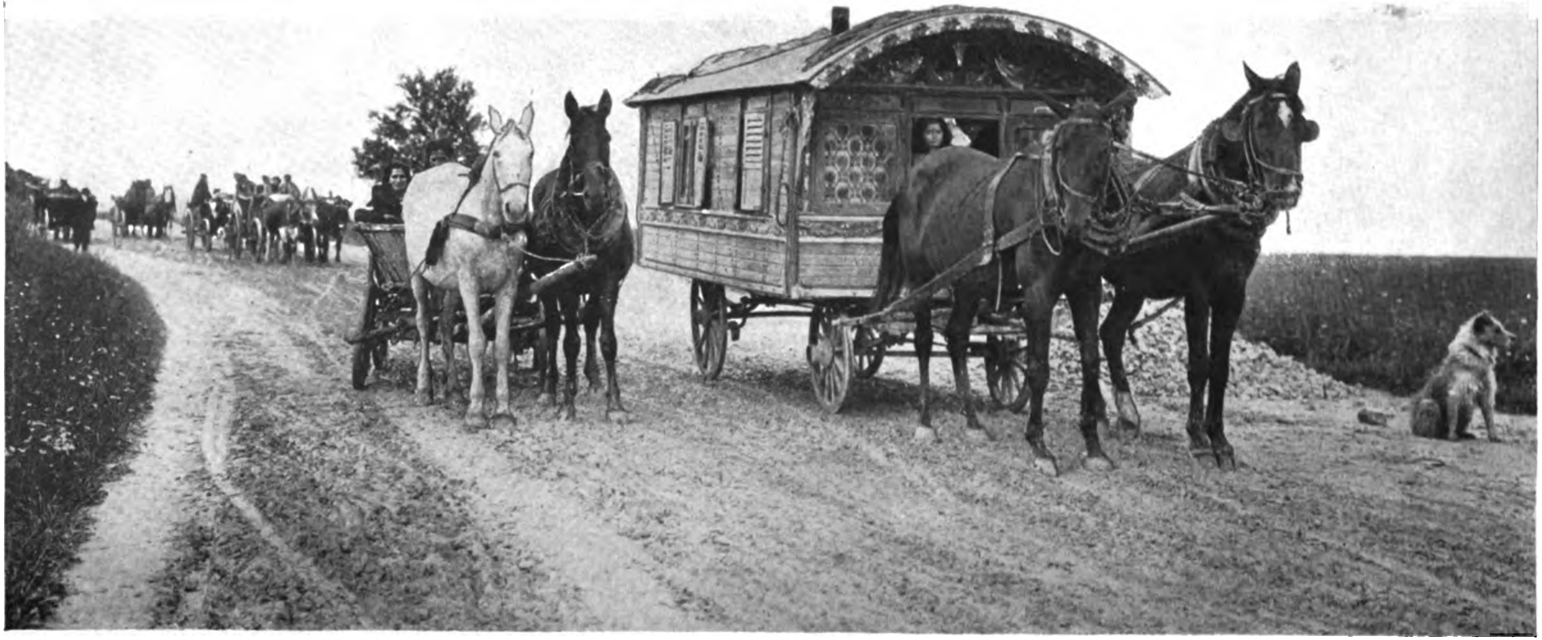


Photo by A. W. Cutler

A ONE-DAY STAND SHOW ON THE ROAD, SEEN BEFORE VAGUJHELY AND CZEJTHE, HUNGARY: SOME OF THE SHOW PEOPLE ARE IN THE WAGON ON THE LEFT. THE "PROPERTIES" ARE DOUBTLESS IN THE LARGE VAN

Perhaps it is this touch of genius which has made of the pleasant city of the Magyars the playground of a continent.

Budapest is, after all, what Nature and the Magyar have made her. But to comprehend her, to come into intimate touch with the wonder of things Magyar, it is not enough to understand the architect and all for which he stands. The city of the Magyars has her own secret: she may be experienced, but not described.

And the Magyar himself, that lovable Bohemian whom culture irks, how may one sound his complex depths?

Never was a people more addicted to philosophy than this people—a philosophy frankly Teutonic. Never was a people more prone to appeal to the sedative properties of half-bricks, a philosophy as frankly Celtic. It would be difficult to find a race more fitted to govern, and impossible to name one less able.

Imagine a people sharing in the superb heritage of the Roman Church permeated to the core with the fatalism of the Orient; a people whose laws are, in some respects, models for the Anglo-Saxon race, still tainted, as to some Arcadian valleys, with the shadow of the *jus primæ noctis;* a people criminally unable to hit from the shoulder, overrun with lawyers, who minister to its sheer Hibernian love of quarreling.

The true Magyar would scorn to bear false witness against his neighbor; he honors his father and mother; he does not steal; he cannot curse; nor does he work on the seventh day, nor indeed on any other. The other commandments take their chance.

THE QUESTION OF TRIBUTE

These things may not be quite convincing. But when we approach the question of tribute, the rendering unto Cæsar of things which are not Cæsar's, the pure Oriental emerges from his purely accidental Western environment and is again in the tents of Shem.

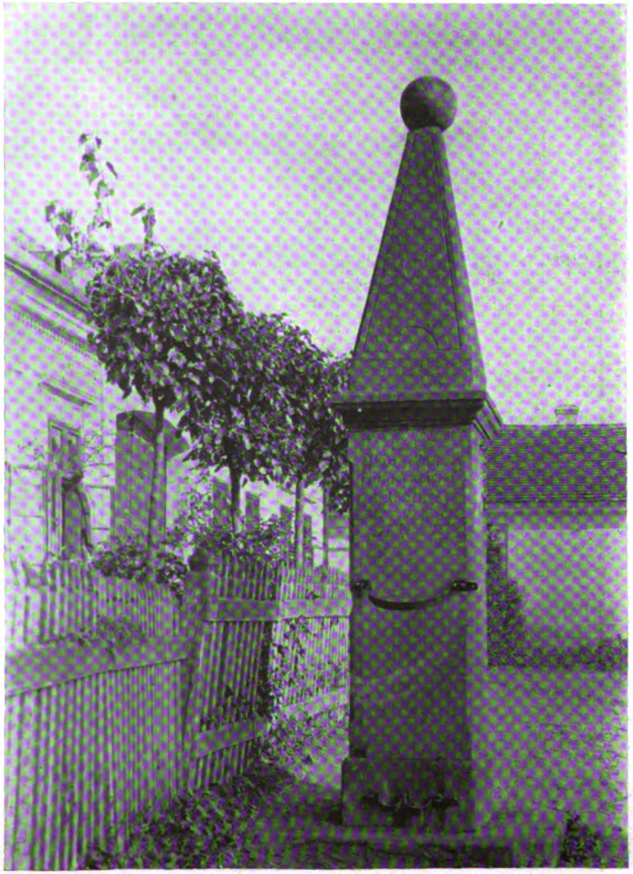
If service be rendered, you pay on sound commercial principles; if you render the service, you pay on unsound Arabian principles less easy to defend. If you cross a bridge or enter a tunnel, if you bet, if you pay rent, make a contract, send in an application, save money, play cards, chess, dominoes, send out a bill, pay a bill, get a license, get a certificate, get married, get buried, get hanged, there is ever this little matter of *dustoorie.* If you belong to any defined religious persuasion, you pay; it is a *luxus.* If not, you are held in truculent contempt by the authorities for evading your just dues, and in wondering envy by the faithful. For every conceivable thing, in all conceivable and some inconceivable circumstances, you pay. Call it excise, customs, rates, *octroi,* tips, dues, taxes, commission, extortion, bribes—call it what you will—you will pay it.

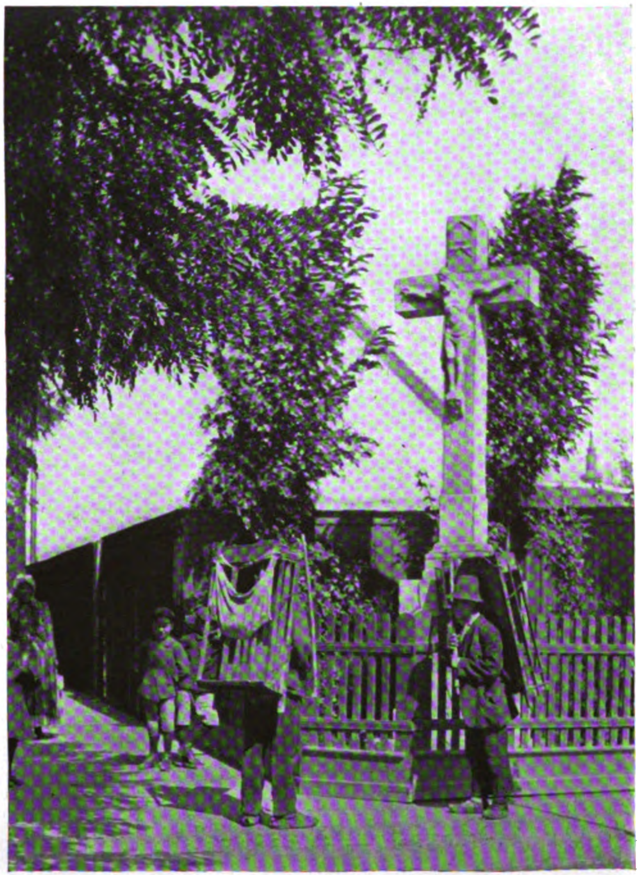
Take a typical, concrete, every-day instance. Go into a café and order a glass of milk, the nominal value of which may be 15 kreuzers. Perhaps the waiter will bring it, perhaps he will forget.

For the sake of the argument he brings it. The waiter, also the boy who loads your table with yesterday's papers, also the man who swoops upon your hat, also the Gipsy who pours out his soul in alleged music for his own satisfaction—and he is easily satisfied—also the disguised Marquis who happens to wander in your direction, all must be appeased. Under 60 kreuzers you cannot well escape.

I speak, of course, of the ordinary timid citizen who approaches no nearer heroism than a prosaic dispute as to cab hire, not of the brave man, born once in a century, who pays his 15 kreuzers and strolls out without feeling any desperate inclination to run for it. I never met this demigod, of course.

This, then, is the happy-go-lucky Magyar of the City Beautiful, the mercurial citizen who lives by chance, who will stake his all and much of yours on the turn of a card or the speed of a horse, to whom life is a masquerade of the gods and suicide no crime, whose business is pleasure, who will one day infallibly be rich by the turn of a lottery wheel. This is the strange anomaly who would fight for a woman in this world or for heaven in the next, but who would work for neither in any world or any circumstances whatever.





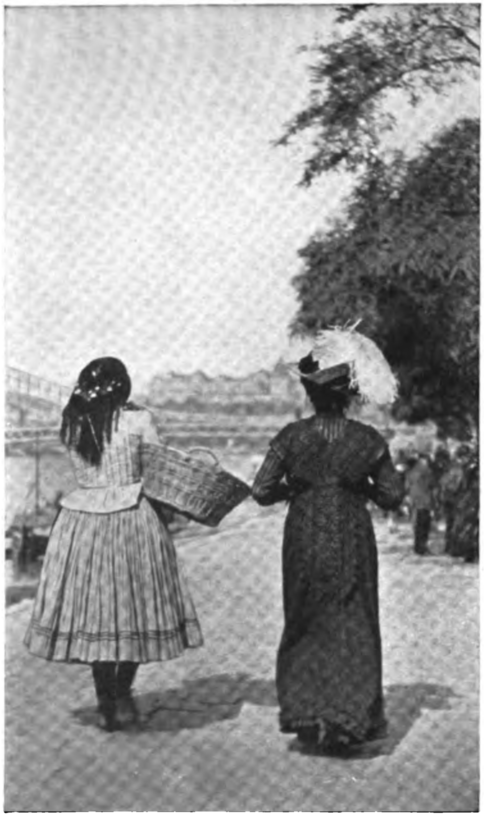
Photos by A. W. Cutler

ANCIENT PILLORY IN FRONT OF THE ROMAN CATHOLIC CHURCH AT POSTYEN, HUNGARY

When a man or woman had stolen anything, they were locked to this pillar on a Sunday and were compelled to hold in their hands whatever they had stolen. As everybody goes to church at Postyen, it was no small punishment.

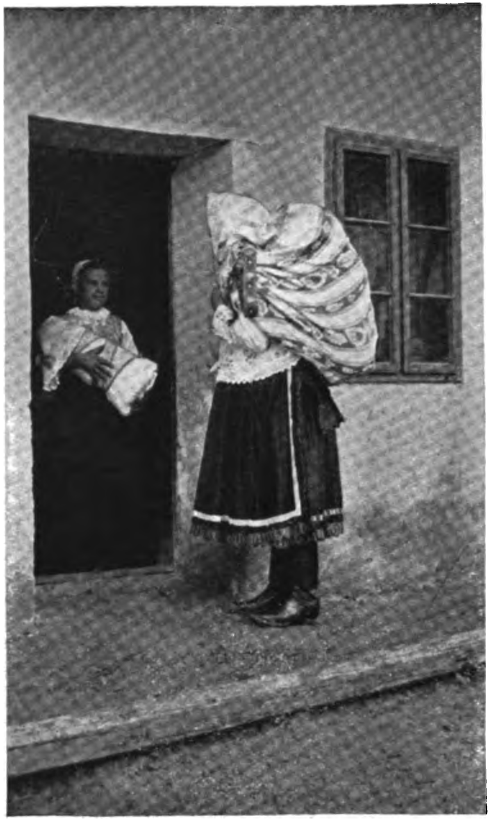
ITINERANT GLAZIERS SEEN IN A HUNGARIAN VILLAGE

The crucifix behind them is typical of all Hungarian villages



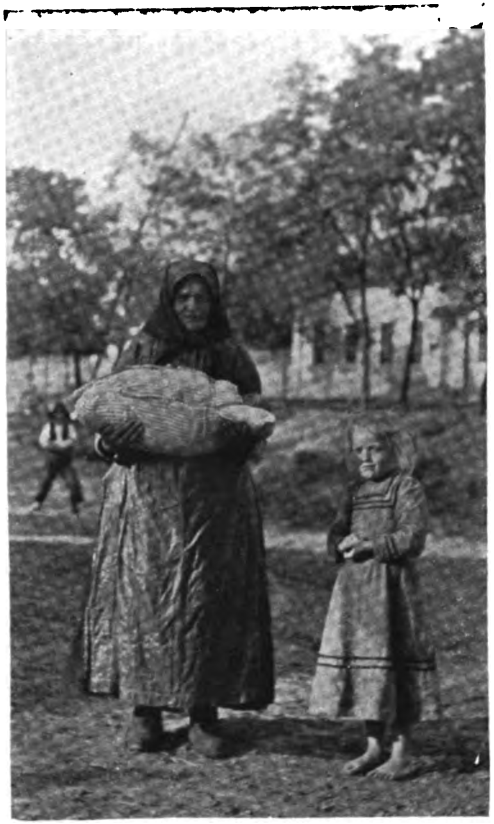
TYPICAL MORNING SCENE IN BUDAPEST

A mistress going to market with her peasant servant, who wears, according to the custom of the country, perhaps six or seven petticoats, hence the difference in dimensions.



A CURIOUS PEASANT CUSTOM

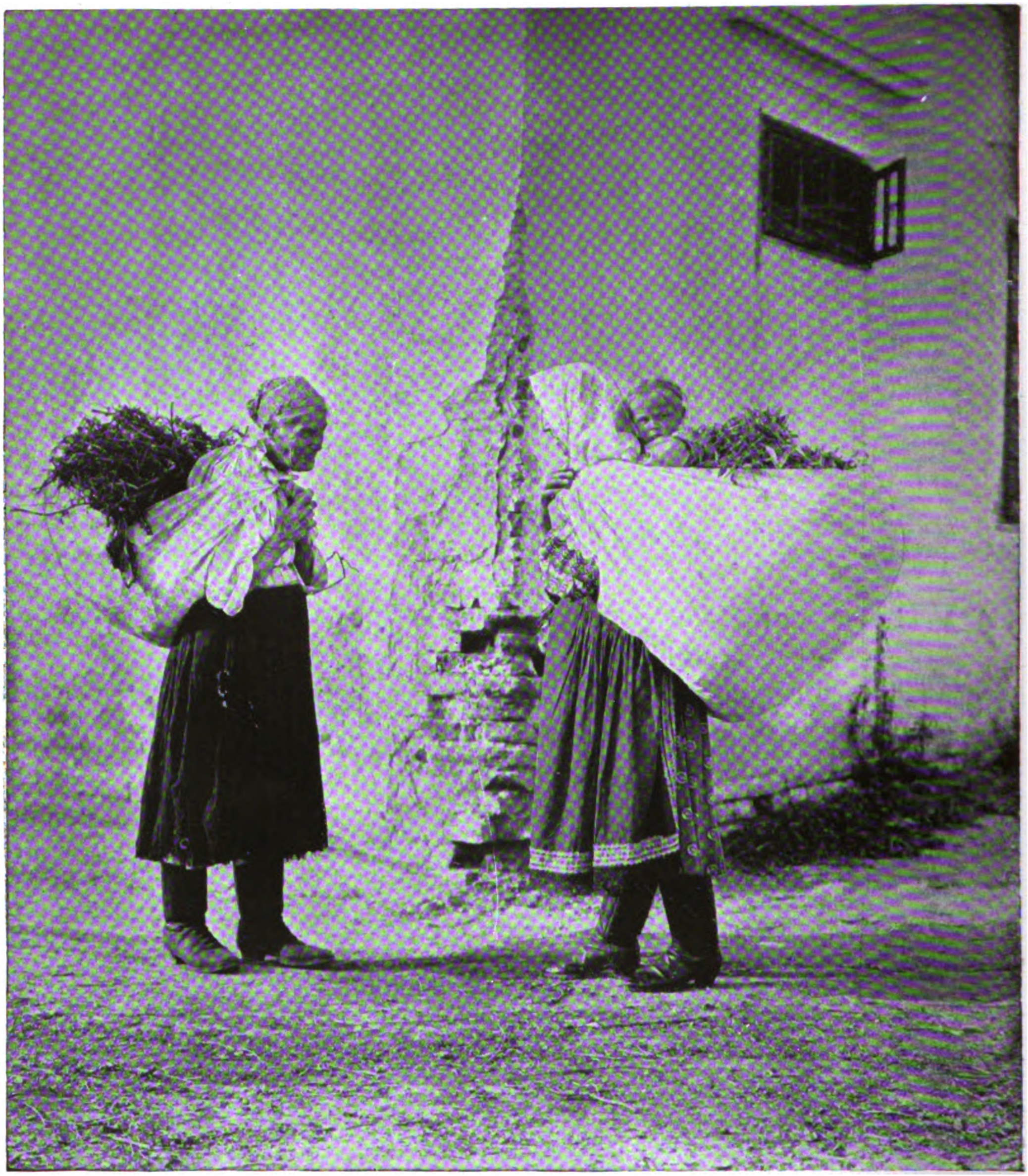
On the birth of the first-born the godmother of the bride calls at her house with an immense pile of cakes and bread on her back—a gift to the first-born, who, by the way, is the only one who does not participate in the feast which ensues.



Photos by A. W. Cutler

THIS WOMAN IS CARRYING HER BABY ON A PILLOW: A CURIOUS HUNGARIAN CUSTOM

The baby is laid on the pillow and the end is lapped over and usually long enough to come up to the infant's chin, thus making a very snug and comfortable little bed.



SLOVAK WOMEN IN EVERY-DAY COSTUME Photo by A. W. Cutler

They may frequently be seen with immense packs of fodder on their backs for their cattle and pigs. Often the babies are carried home in the pack

NO CITY SO LITTLE REPRESENTS THE PEOPLE

No city in the world is so little representative of the psyche of the nation. That Budapest may be great, may rank with the other great capitals, Agram, Debreczen, and Szeged must be starved. The passion for Teutonic centralization, as foreign as anything could well be to the true Magyar genius, has concentrated in the city all the intellectual, political, scientific, and artistic life of the nation. A Manchester school of politics, an Edinburg school of medicine, a New England school of literature, a Leyden school of art would not be suffered to exist. In

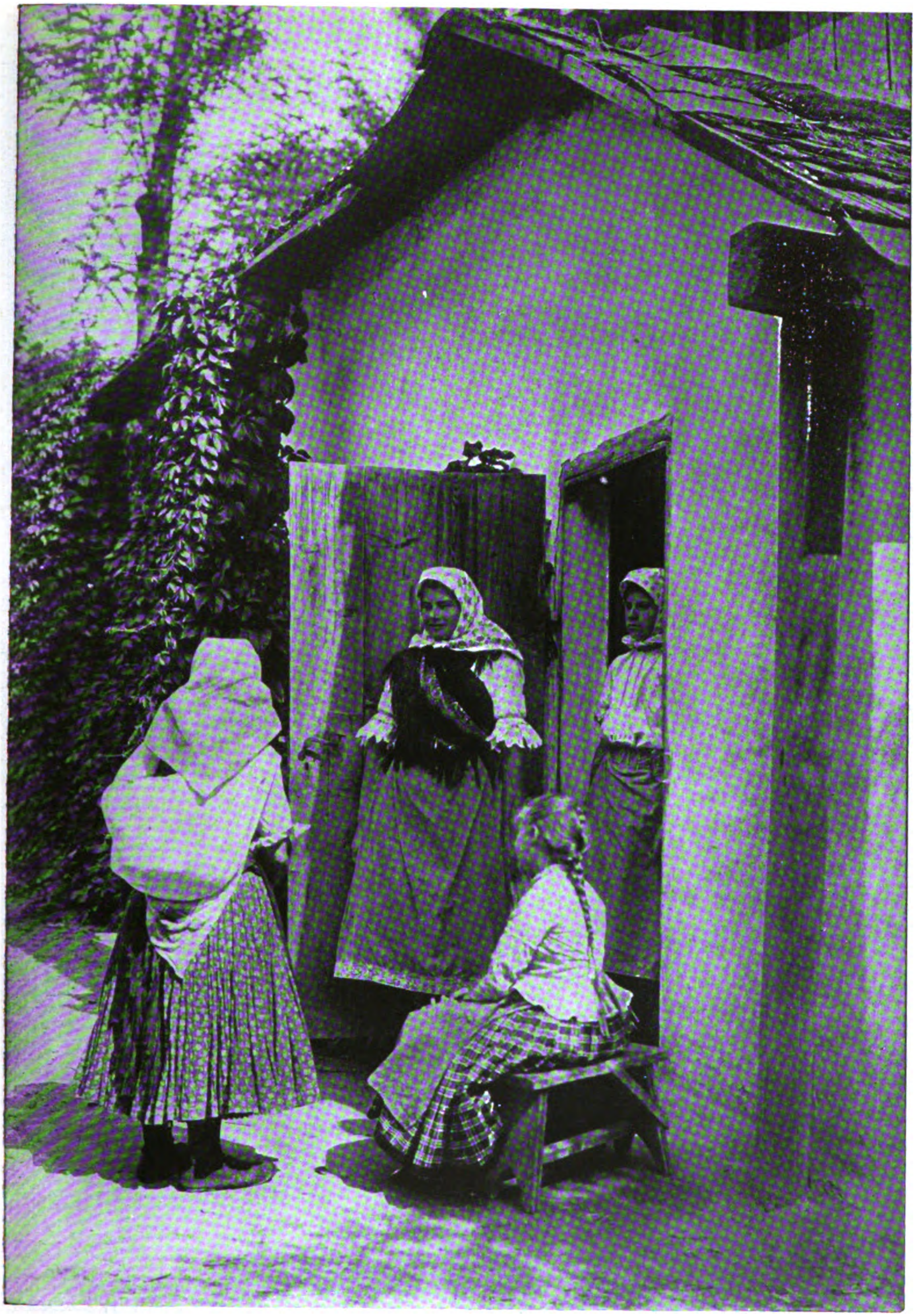


Photo by A. W. Cutler

A COTTAGE SCENE AT A LITTLE VILLAGE IN HUNGARY

Where. I was told, no photos had ever been taken before by an Englishman or an American for publication. The old lady on the left had just come in from the market. Brilliant colors are a feature of this costume. The kerchief headgear, short sleeves and dress, and many petticoats are notable items of the costume.

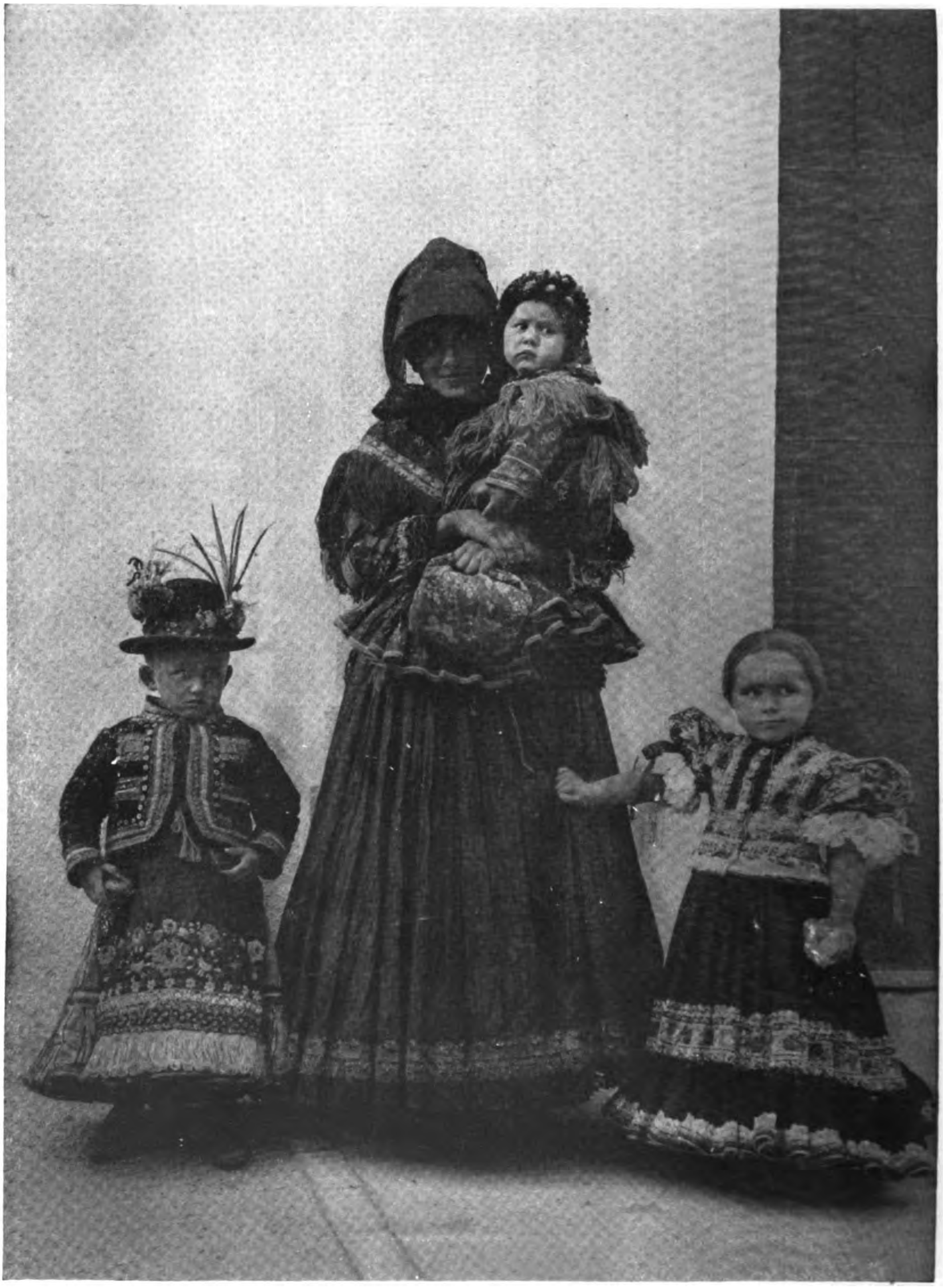


Photo by A. W. Cutler

A HUNGARIAN (MAGYAR) MOTHER AND CHILDREN JUST HOME FROM CHURCH

The children really look like dressed-up dolls, and are emphatically "too cunning for words"

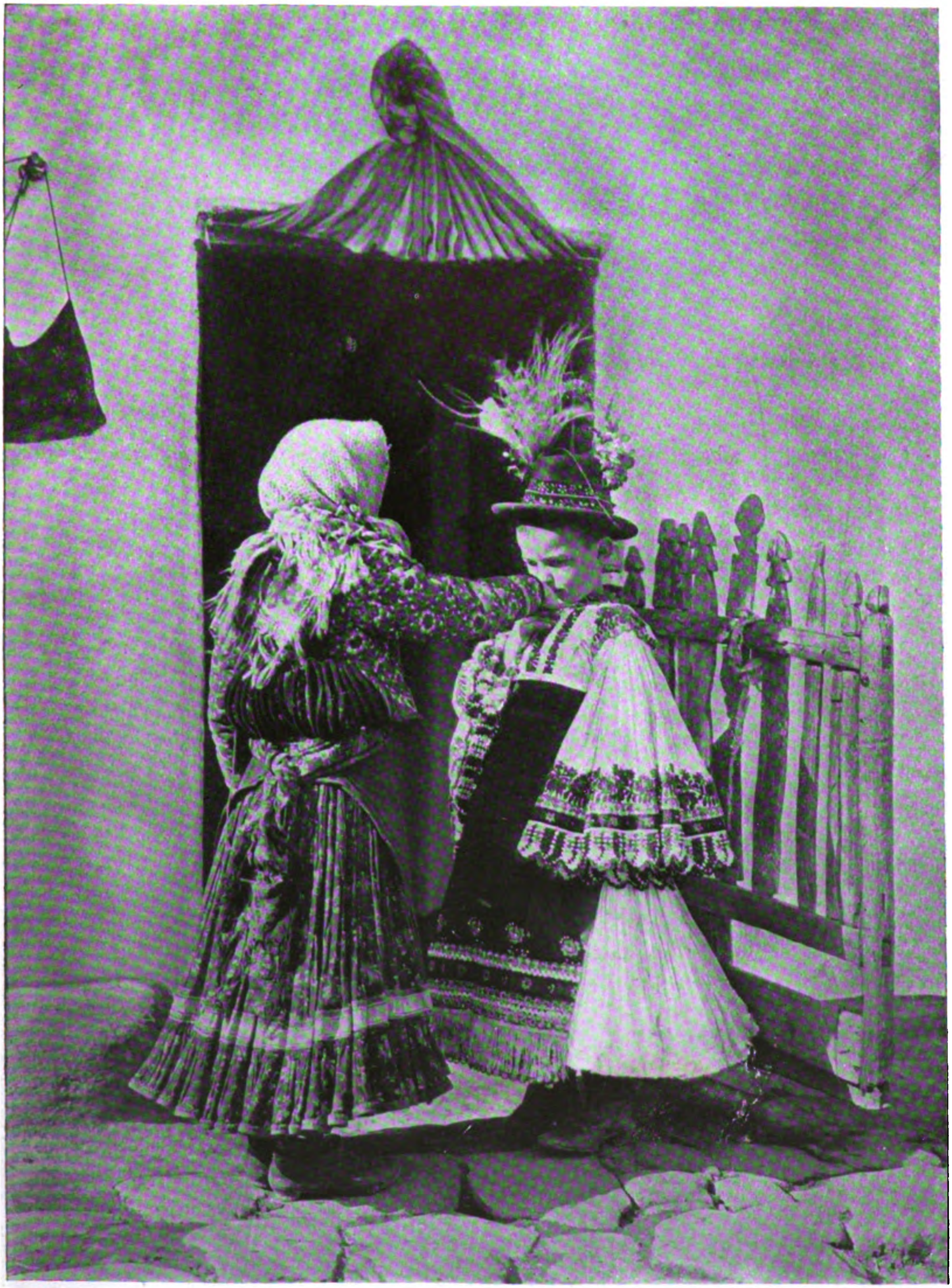


Photo by A. W. Cutler

LITTLE SWEETHEARTS, AT MEZOKOVESD, HUNGARY

It is customary throughout Hungary to kiss the lady's hand on arriving at and when departing from her house. Note the peculiar stiffened tucks at the back of the little girl's dress at the waist. She wore them years ago, and should she live to be 80 they will still appear at the back of her dress and look just as uncomfortable as they do now. Mother and daughter, father and son, dress alike (see pages 369 and 370).

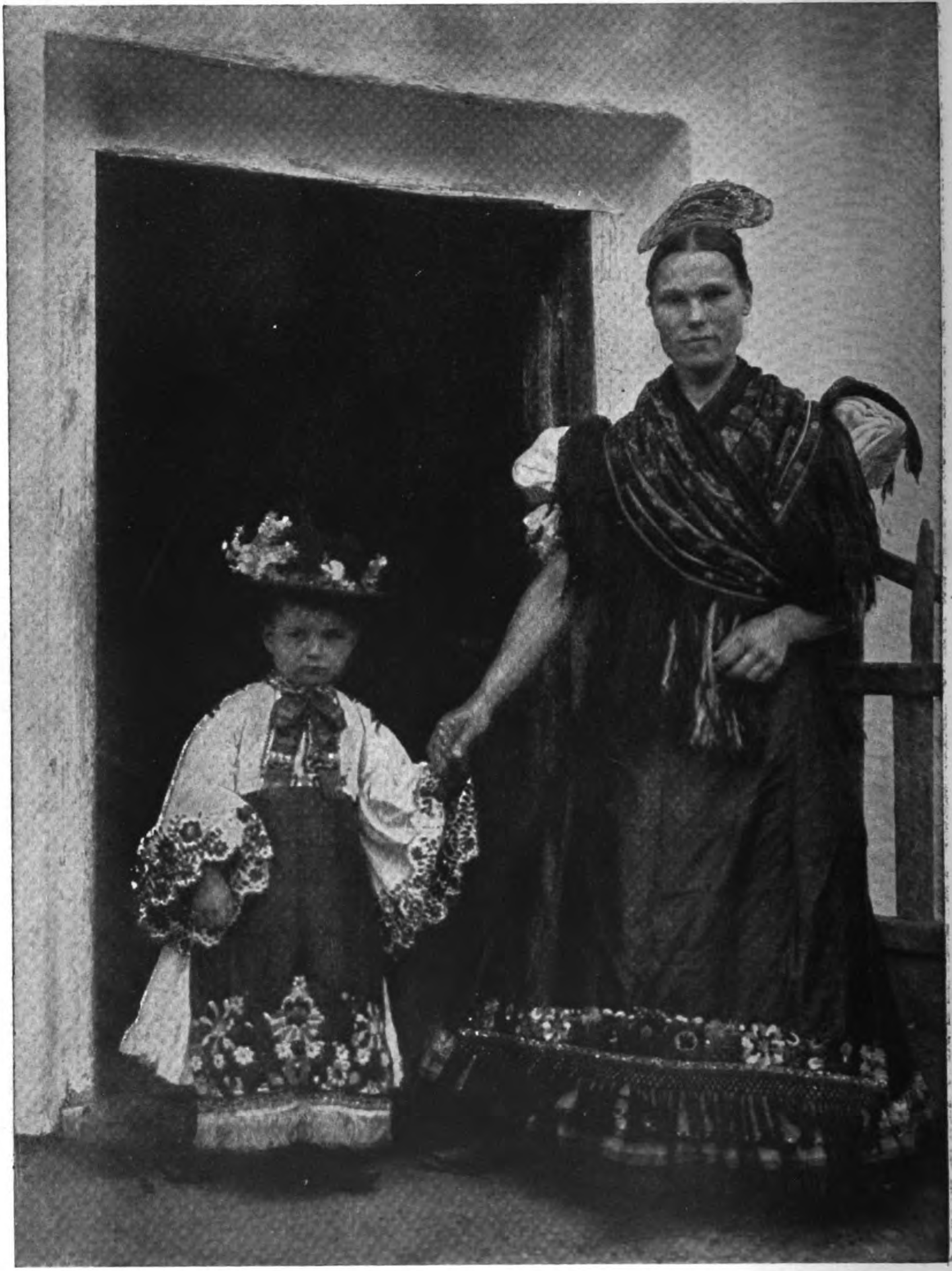


Photo by A. W. Cutler

A MEZOKOVESD AUNT AND HER LITTLE NEPHEW

The decoration on the former's head is an indication that she is a newly married woman. It is usually worn for a period of one year after marriage. Note the peculiar tucks, or ridges, in the dress of the woman. These tucks are stiffened by cardboard, and are worn alike by old grannies and little tots of three or less (see pages 362 and 366).

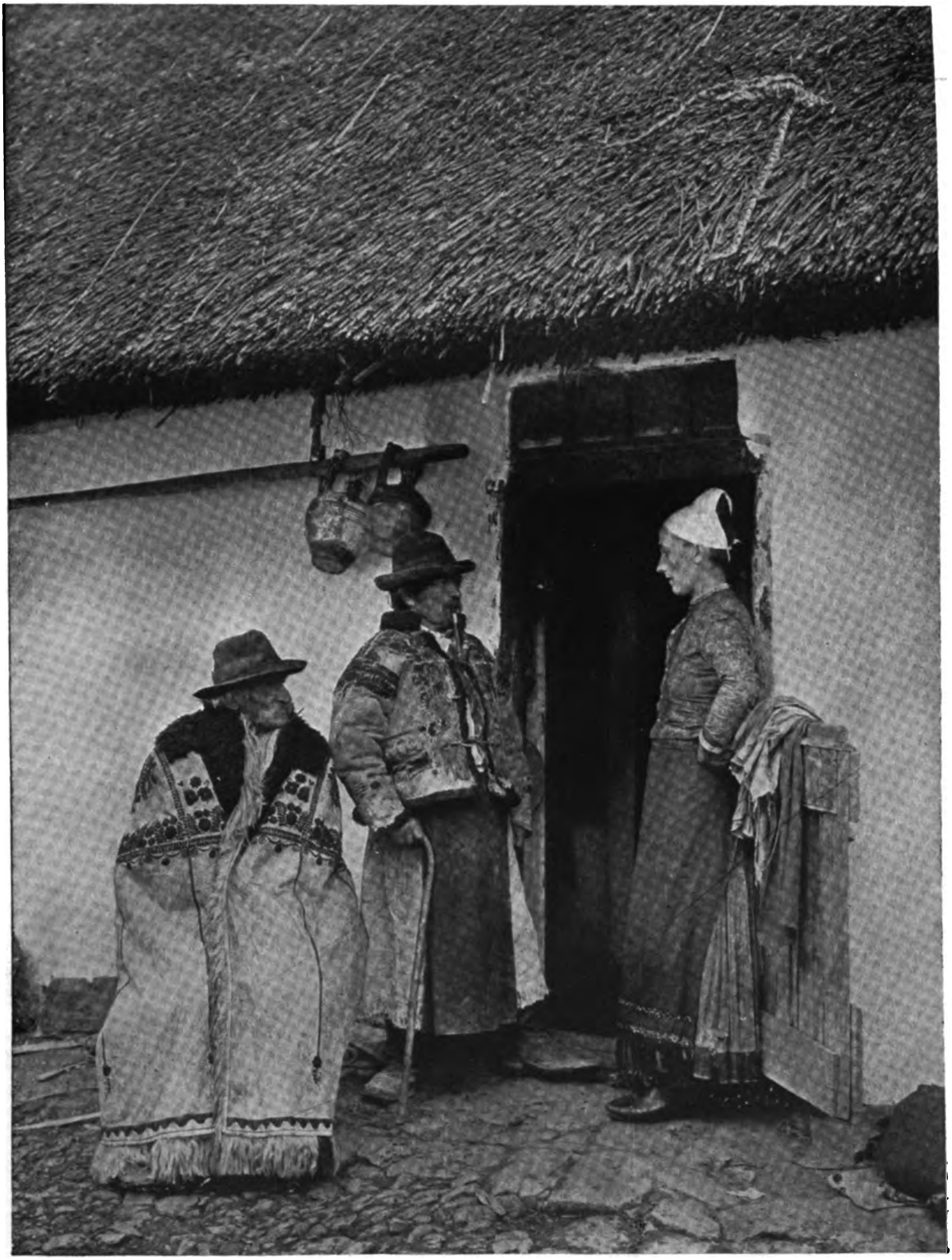


Photo by A. W. Cutler

A THREE-CORNERED CHAT OUTSIDE A MEZOKOVESD COTTAGE

The men are wearing coats of sheepskin, the wool being inside—a very warm and comfortable garment. The short coat worn by the man in the center is not nearly as popular as the long coat worn by the old man. These coats are often decorated with designs in colored wools. The cone-shaped arrangement on the back of the woman's head is a small basket, universally worn by the women. The hair is done up and placed under this basket, and when on the street a covering is invariably worn over this basket, giving the head a very peculiar shape (see page 371).

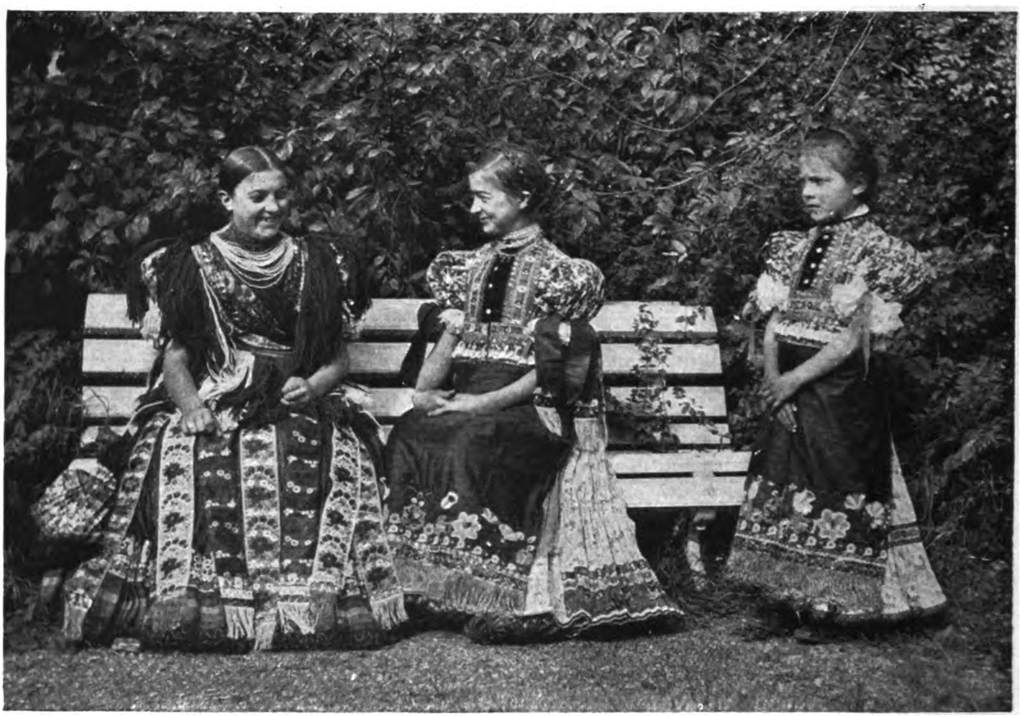


Photo by A. W. Cutler

THE MEZOKOVESD GIRLS IN THEIR SUNDAY COSTUMES

The long brilliantly decorated ribbons of the girl on the left constitute as smart a dress as the Mezokovesd young ladies ever aspire to, except when they get married. Note the stuffed shoulders—a fashion which all ages of the female sex rigorously follow (see pages 362 and 371).

no department would the capital suffer either rival or peer.

The Magyar is proud of her magnificence, her success, and the splendor of her achievements as creator and interpreter. In any department save perhaps that of fiction Magyar literature has no second. In art there exists no better portrait painter than Lásztó; in music nothing on earth will ever compare with the joyous and passionate folk-songs. One of the greatest administrators, probably, that this economic age has ever seen, Ignatius Darányi, who transformed the country from his place as Minister for Agriculture, happily, still lives. Fodor, certainly the greatest hygienist of the modern European school, and first Professor of Hygiene at the University of Budapest, was, too, a product of the city. To her engineering genius the long single-span bridge over the Danube is a monument; to her architectural taste the finest Parliament building in the world bears eloquent tribute.

But it is obvious that a country 95 per cent of whose area is productive could never be adequately represented by its metropolis, however many-sided. The capital and the country are poles asunder. Each stands for everything which the other lacks. The asset of the State is the peasant proprietor, that of Budapest the commercial Jew.

THE MAGYAR IS THE DOMINANT RACE

One phenomenon, without due regard for which the whole trend of Magyar cult, its history and very being, would appear obscure and perverted, consists in the undoubted genius for dominion, coupled with an undoubted inability to assimilate, which has always been a noteworthy trait of the Magyars as a people.

At whatever stage of Magyar history the thread is taken up, the people appear as a minority; whatever the circumstances, that minority is always dominant. The Slav and Slovak bore them down by count of heads; the successive settle-

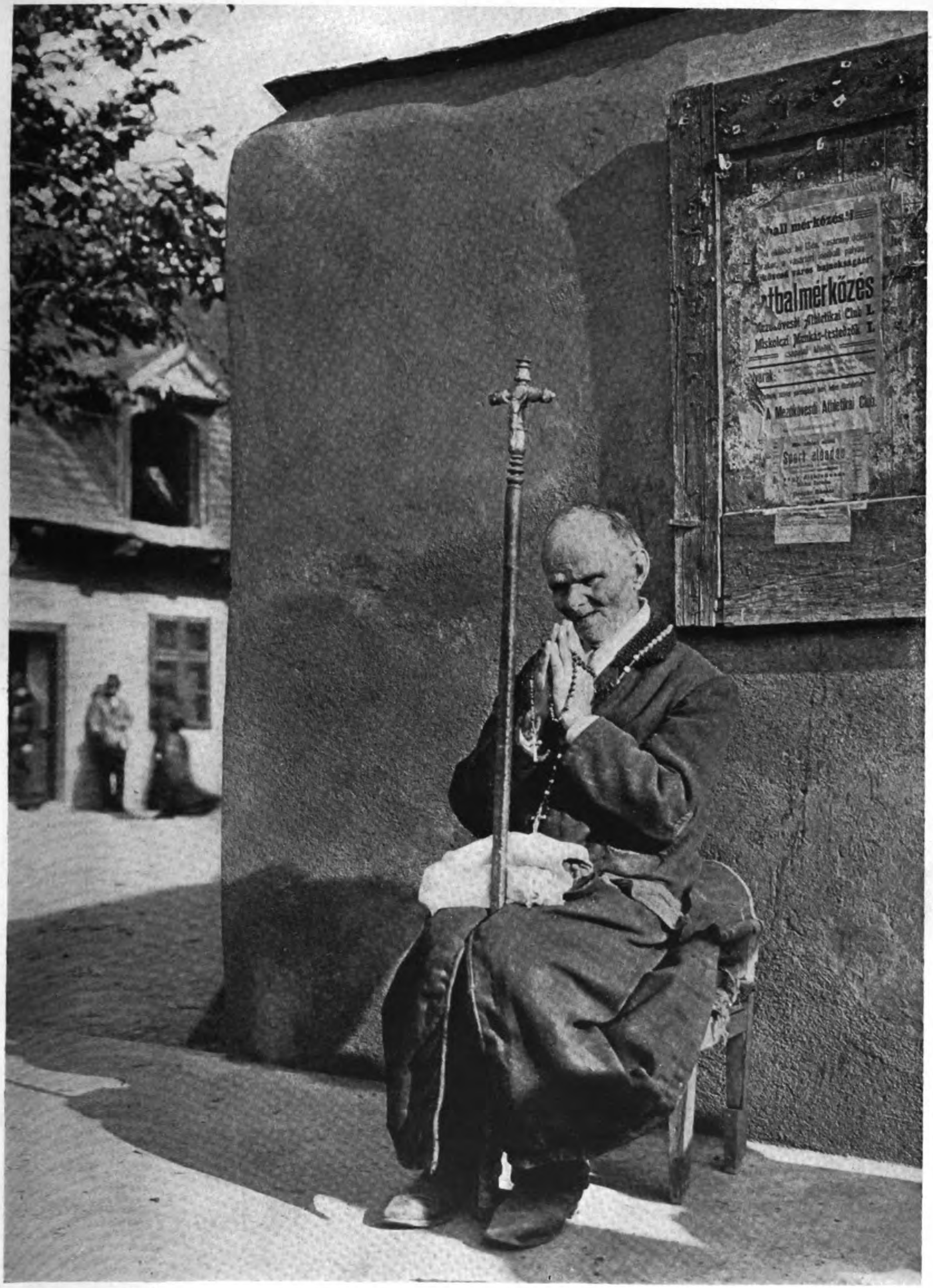
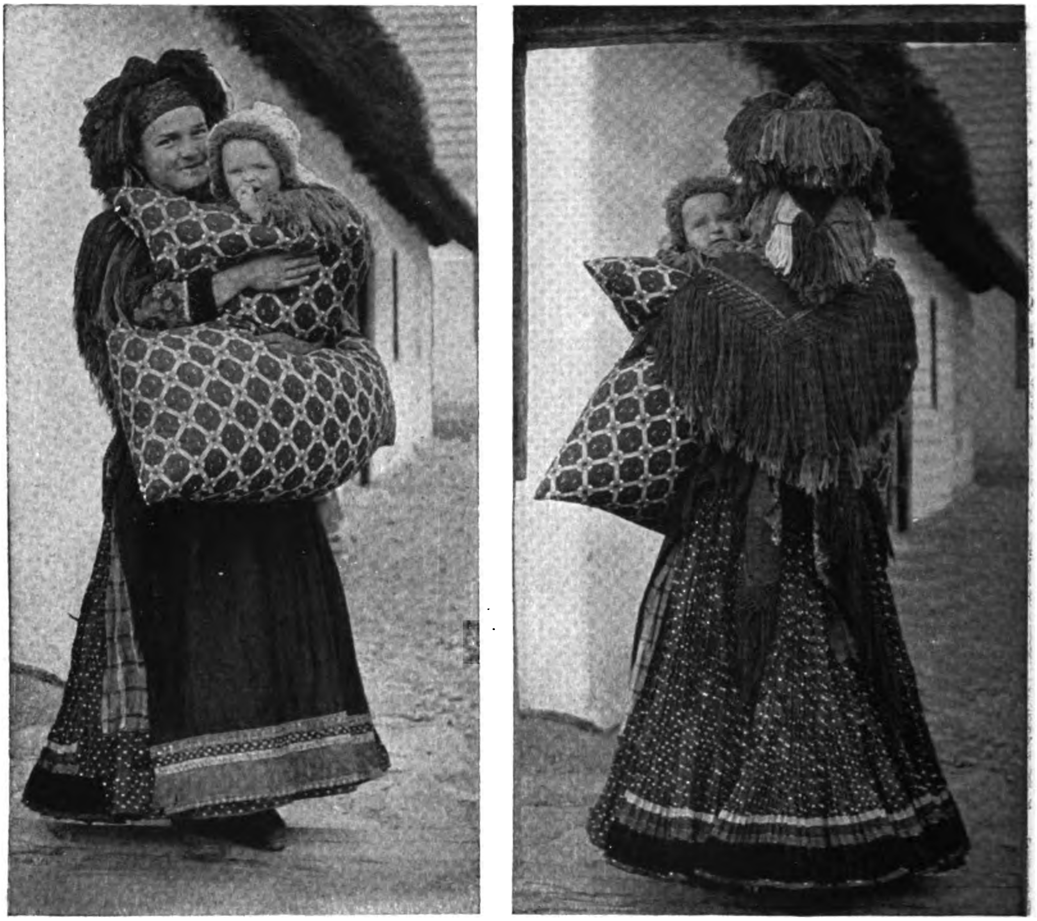

ball mérkőzés!
tbalmérkőzés
Athletikai Club I.
A Mezőkövesdi Athletikai Club

Photo by A. W. Cutler

HUNGARIAN BEGGAR SEEN AT A STREET CORNER IN THE VILLAGE OF MEZOKOVESD

It is not the custom among this fraternity in Hungary to ask outright for alms. They simply pray that donations may be forthcoming, and as soon as they are satisfied with the receipts they go home. The poster on the bulletin-board is an advertisement of a game of American foot-ball. The letters "ball" can be clearly seen on the top line, while on the third line the last word but one is "foot-ball."



Photos by A. W. Cutler

A HUNGARIAN MOTHER WITH PILLOWS SWADDLED ABOUT HER BABY

This woman is wearing a style of headgear peculiar to Mezokovesd. It is simply a small tasseled woolen shawl, deftly twisted so as to form a sort of skull-cap in front, while all around the long tassels hang loosely.

Back of woman seen in previous photograph, showing the extraordinary profusion of tassels at the back of the head, surmounted by the cone-shaped basket which covers her hair, "done up" in a "bob" for the purpose.

ments of Hun, Saxon, Suabian, and Serb by the ruling powers; the irruptions of Roumanian and Turk, Bohemian and South Slav; the wholesale descent of the Teutonic bureaucracy, the ruling Austrian vanguard of absorption, while contributing to the material prosperity of the people and the declension of a racial strain, never seriously menaced the seemingly natural and inevitable overlordship of the Magyar.

In recent times the Magyar population has grown by natural means, by chance accretion, and by a system of intermarriage until it has converted a minority into equality; yet the Slav is still a Slav—more aggressively a Slav than ever. The Slovak who roamed the Alföld a thousand years ago has varied his hàbitation, but preserved his identity. The Suabian, whose villages ring the capital herself, differs nowise in habits, in language, in tradition, from his cousin of the Hercynian forest, ancestor of the Hapsburgs. The Roumanian preserves not only the tongue of the legionaries, his putative fathers, but history of his own devising and geography strictly subservient to his political ideals. The Magyar dominates them all, but cannot assimilate them.

The Jew has been received with marks of consideration indicative alike of the

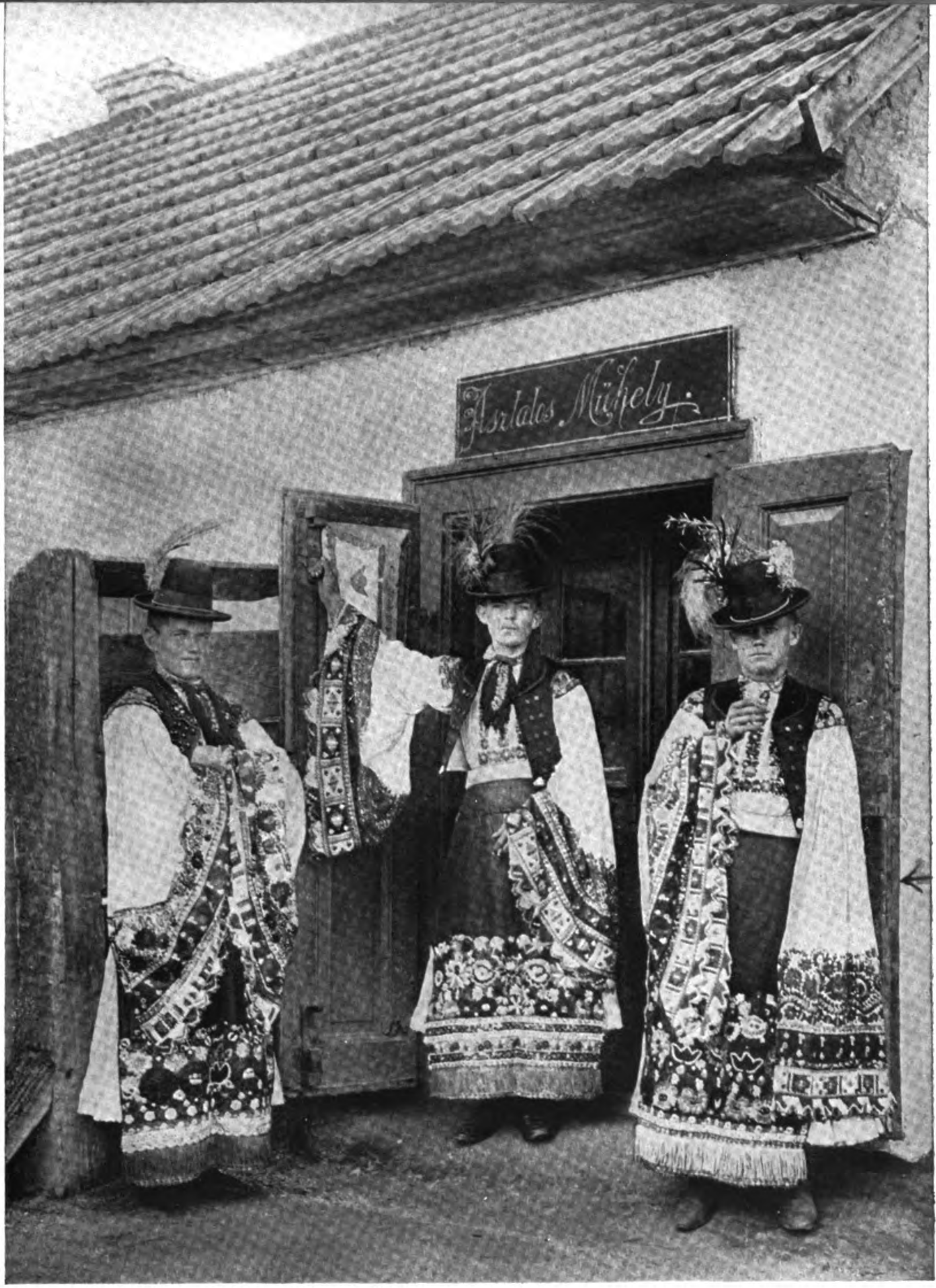
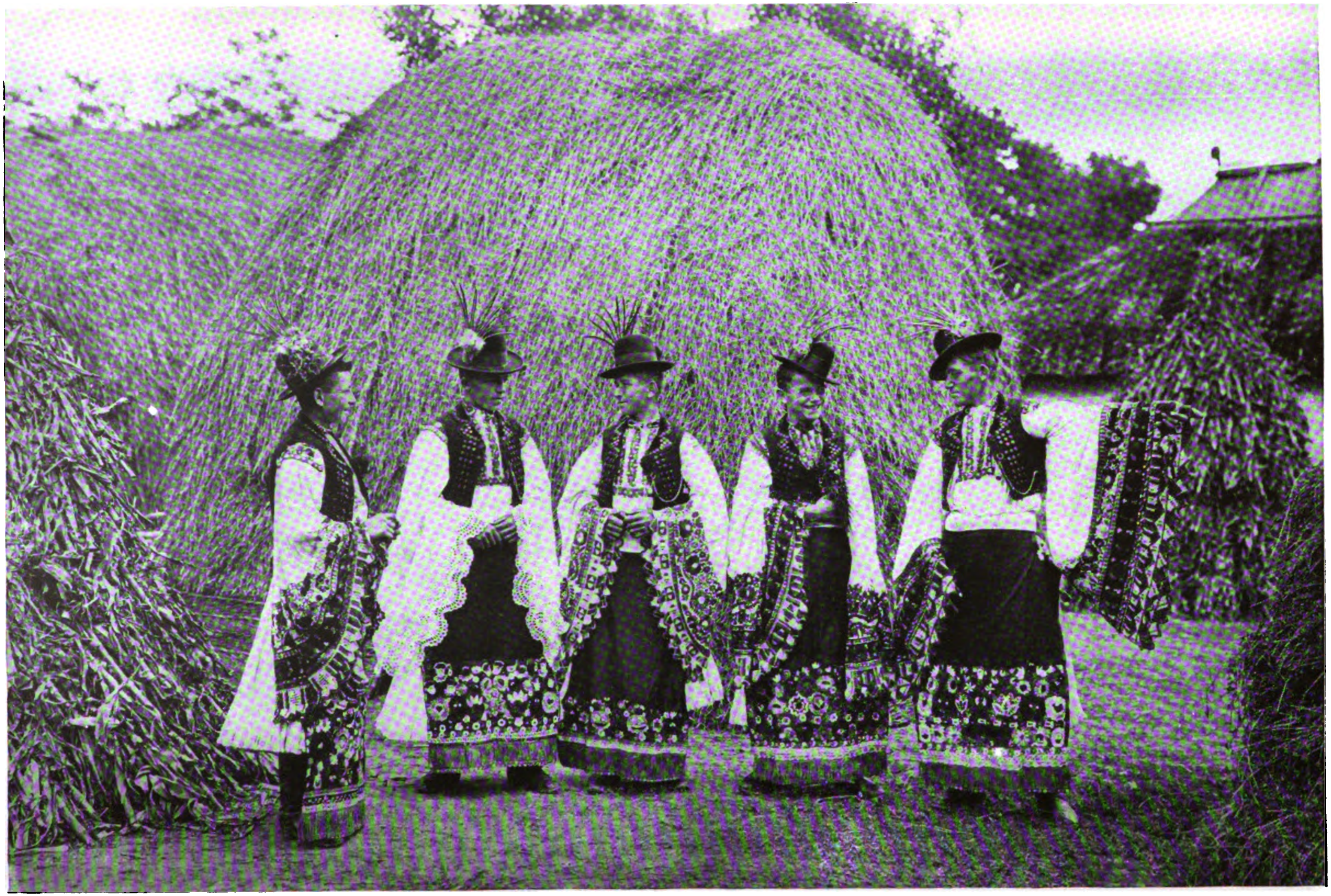

Asztalos Műhely.

Photo by A. W. Cutler

EXTRAORDINARY COSTUME WORN BY THE MAGYAR PEASANTS OF MEZOKOVESD

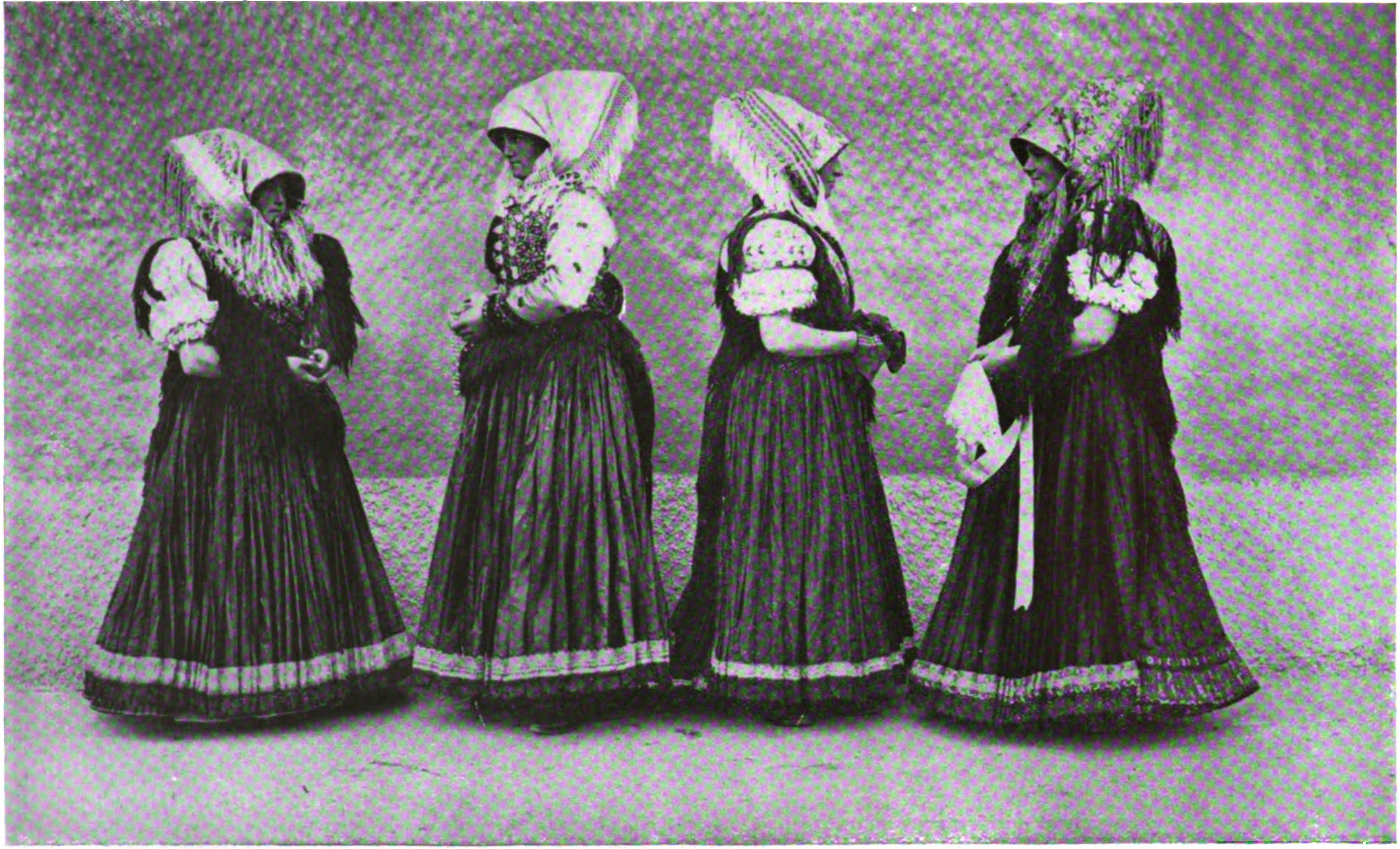
It is, of course, worn only on Sundays. The immensely long sleeves—like a parson's surplice—are a remarkable feature. Long black aprons are always worn, and the decorations on these and the sleeves and front of the shirt are in colored wools or silks. Often the costumes are richly embroidered as well. The ornamented hats are curious. The wide Hungarian trousers and high Wellington boots complete the costume. The great length of the sleeve is well illustrated by the man on the right.



YOUNG PEASANTS OF MEZOKOVESD, HUNGARY, IN THEIR SUNDAY COSTUME

Photo by A. W. Cutler

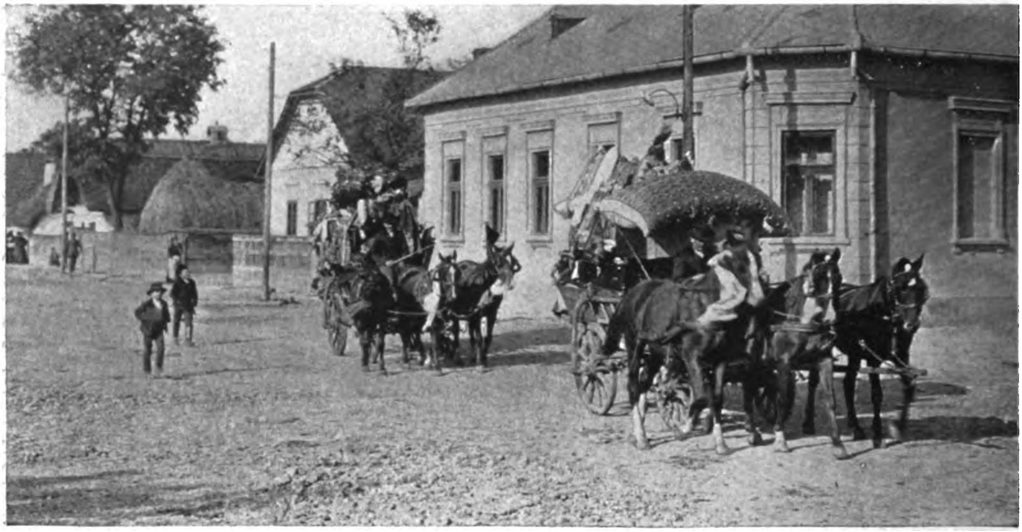
Note the little jaunty black waistcoats, studded with buttons, the immensely long sleeves, and the long black aprons, richly ornamented with designs in colored wools, sometimes silks. The befeathered soft black felt hat and long Wellington boots complete the costume. The wide Hungarian trousers are, of course, worn. **Note the beautifully embroidered sleeves of the second man on the left.**



DAMES IN THEIR SUNDAY COSTUMES AT MEZOKOVESD, HUNGARY

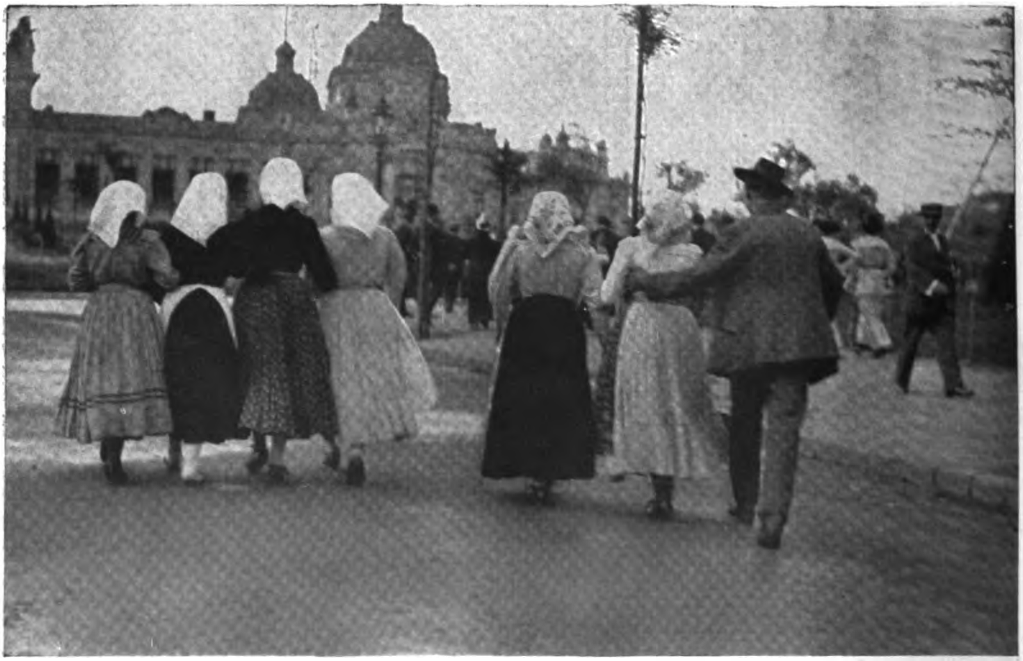
Photo by A. W. Cutler

The head is covered with beautiful little silk shawls, and the curious shape is the result of the cone-shaped basket at the back of the head described on page 365. Note the two ladies on the right holding handkerchiefs over their hands—the custom on Sundays



THE BRIDE'S TROUSSEAU ON THE WAY TO THE BRIDEGROOM'S HOME: MEZOKOVESD, HUNGARY

The horses' heads are decked with handkerchiefs and a large round twist of bread



OUT WITH THE GIRLS

Photos by A. W. Cutler

Young Hungarian leaving the City Park, Budapest, with a few damsels who have succumbed to his winning ways

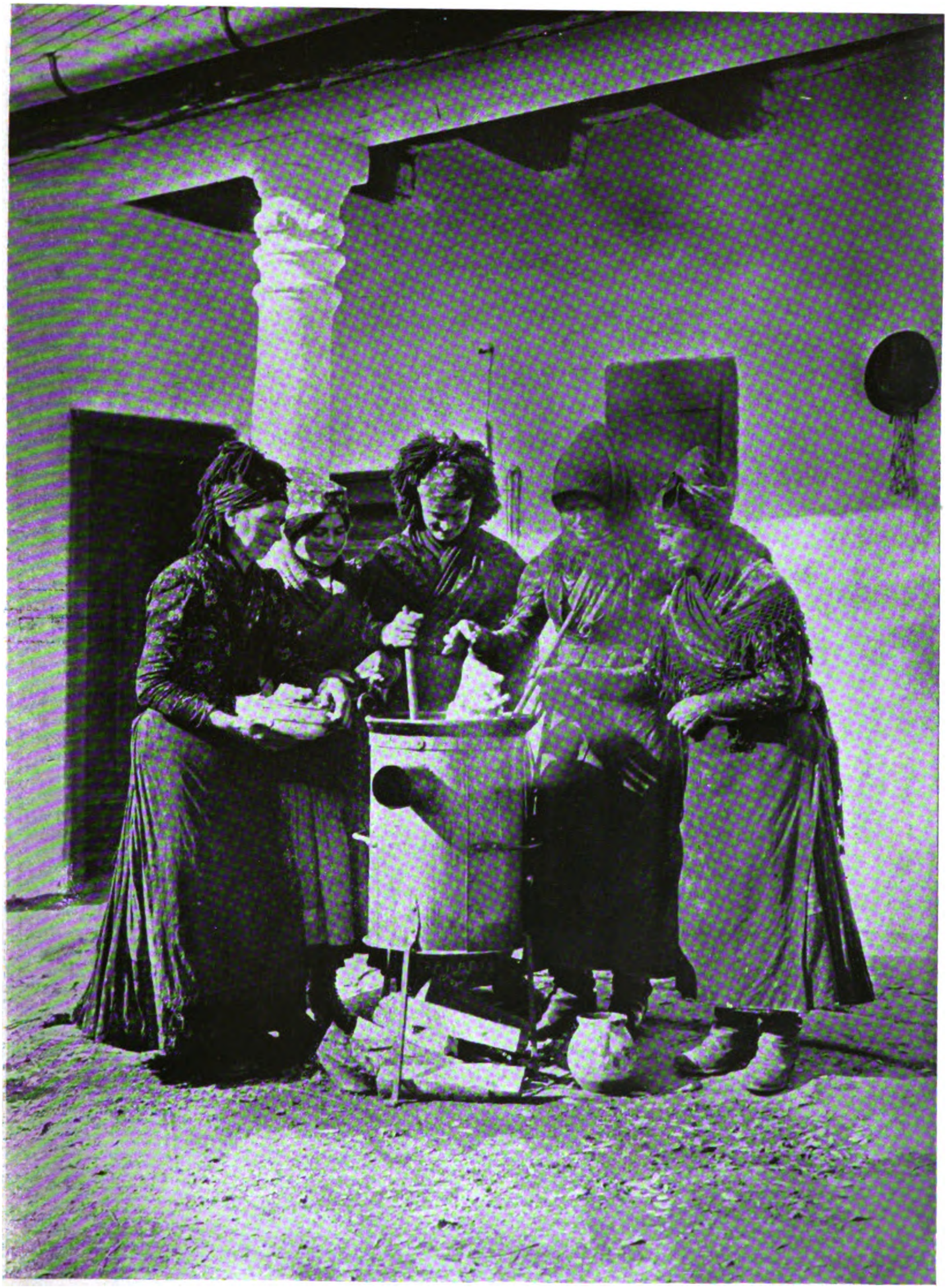


Photo by A. W. Cutler

COOKS AT THE WEDDING (MEZOKOVESD, HUNGARY) PREPARING THE FEAST WHICH WILL TAKE PLACE AFTER THE WEDDING

This is a scene outside the bride's home. The kitchen stove was completely covered with pots and dishes, so that some of the cooking had to be done outdoors

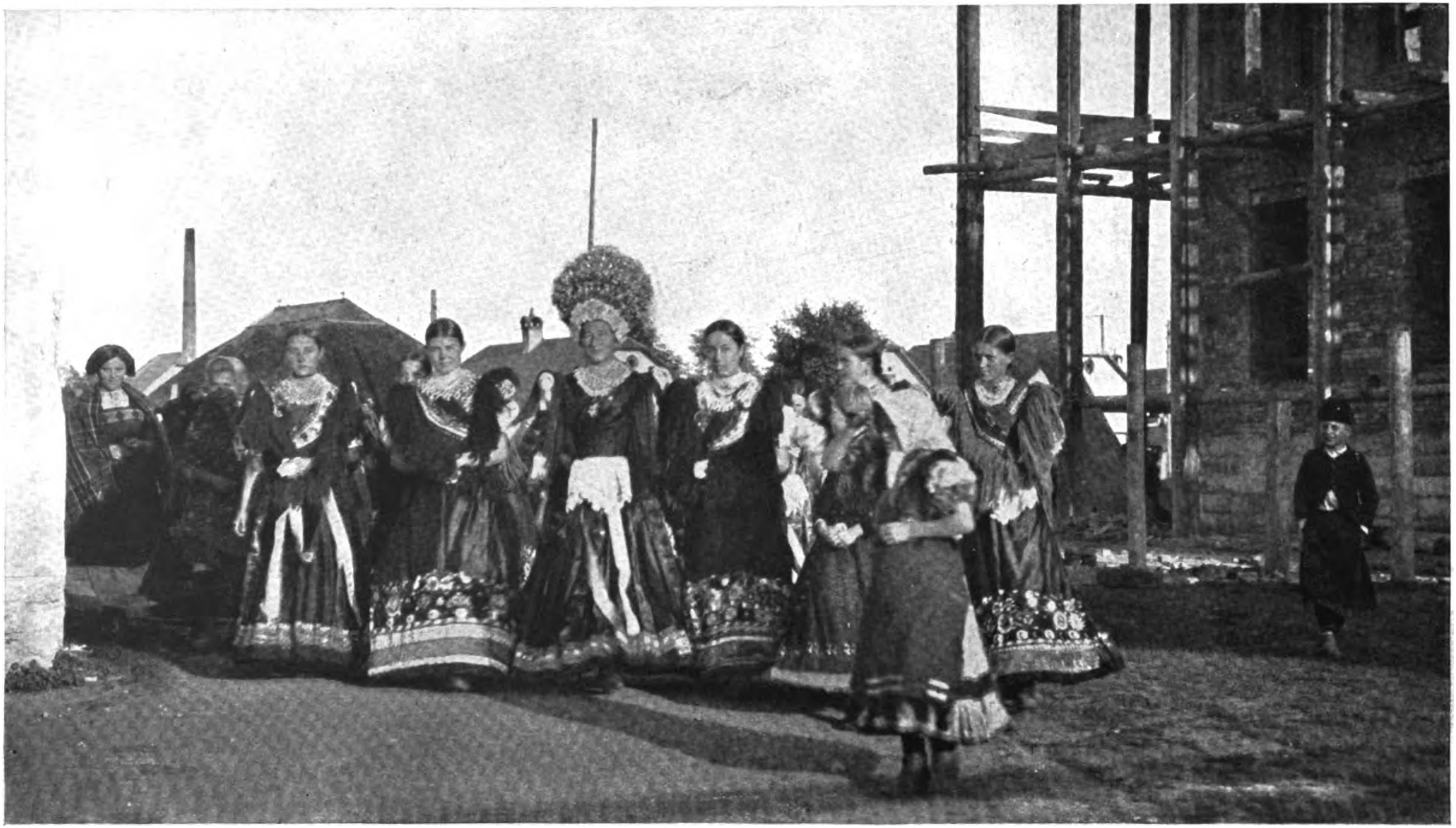


Photo by A. W. Cutler

THE BRIDE AND HER BRIDESMAIDS ARRIVE AT THE CHURCH FOR THE WEDDING CEREMONY: A MEZOKOVESD WEDDING

The ornament on the bride's head is of tinsel, not as heavy as it looks good feeling and political acumen of the nation. He has been invested with every civil privilege it is in the power of the State to bestow. Nay more, honors which stand, as it were, at call he puts aside. Consequently the Jew is thoroughly identified with the nation. He has, by means of intermarriage and by apostasy, brought to a law-ridden, but in its inmost soul a traditionally lawless, people the inestimable leaven of stability. The commercial awakening of the country owes much to him; it could scarcely be otherwise. He has left an indelible mark upon her institutions, and in other ways has laid the country of his adoption under obligations.

Save for this solitary exception, whose attributes lift it almost to another plane, the failure of the Magyar to assimilate elements obviously and admittedly inferior, in almost every sense—moral, physical, mental, political—is perfect and complete.

By joining herself to Austria, Hungary is saved the consequences of pure isolation.

The effect of the combination is to leave Hungary not quite free. As a State she is independent; as a political factor her identity is merged in that of the Dualism. All her leisure is thus devoted to setting her house in order. And indeed this is a work which might well daunt her.

In Western societies the State is an organism whose constituents embrace the people. Here it is a something divinely inspired and existing independently of the citizen body.

The Magnates and the Intellectuals who direct the

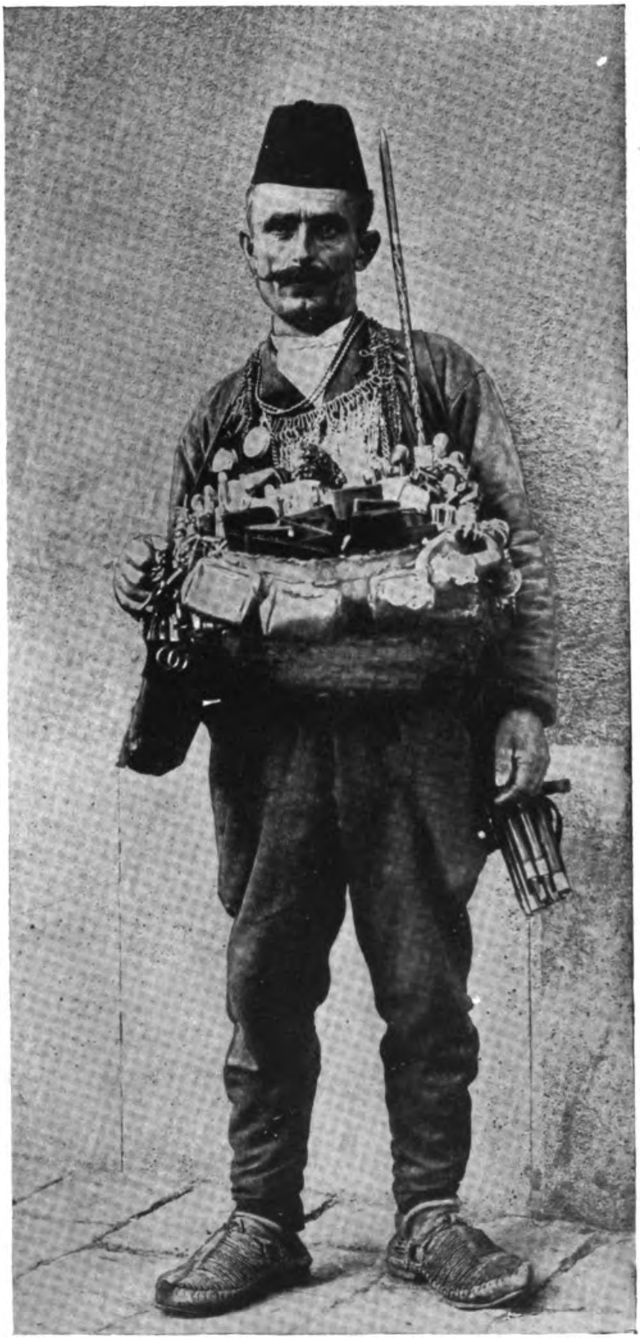


Photo by A. W. Cutler

A SERVIAN VENDER OF ODDS AND ENDS AT BUDAPEST

Note the curious footgear. A coarse fiber, like loose string, covers the top of the shoe in uniform rows

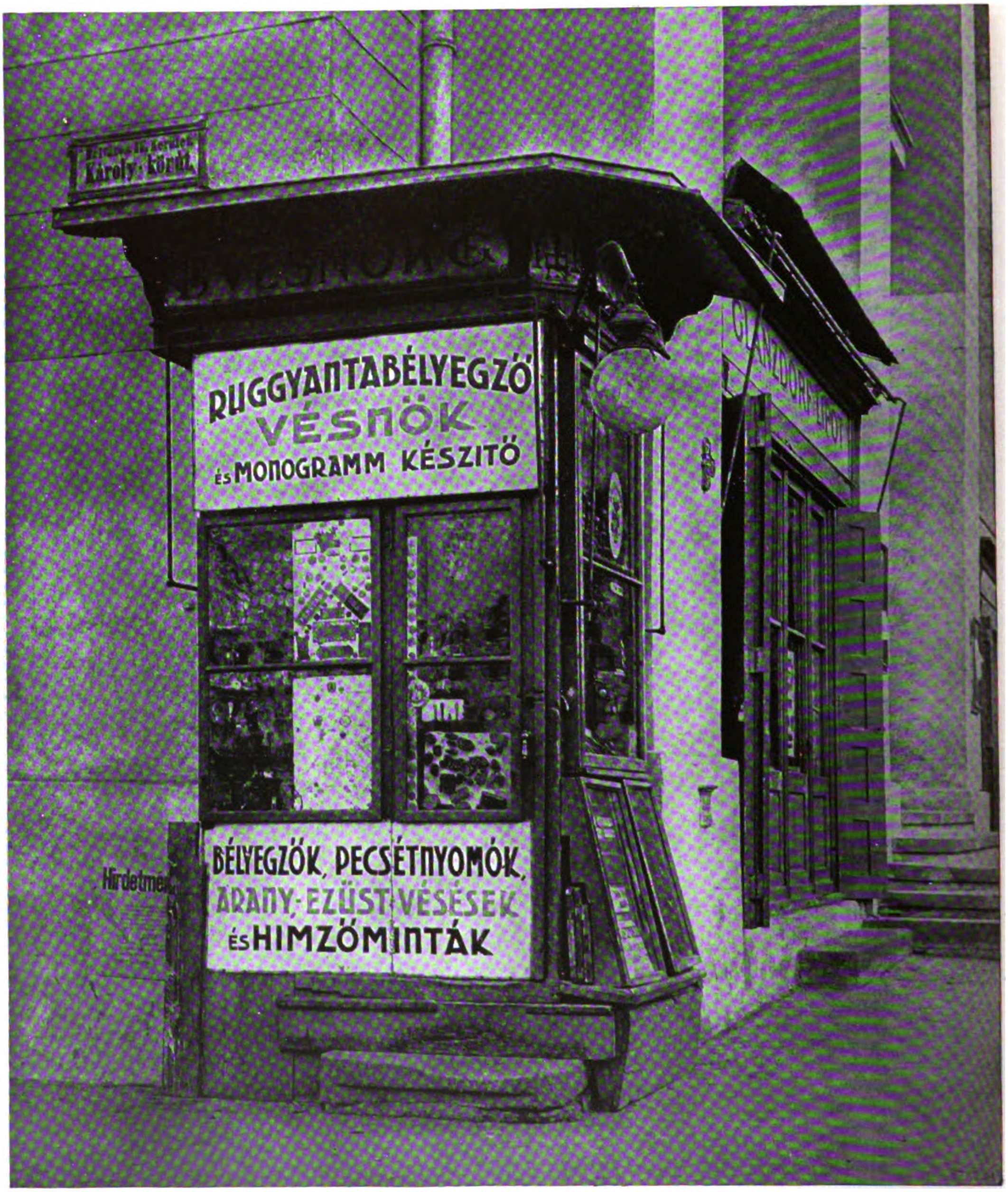

Károly körút
RUGGYANTABÉLYEGZŐ
VÉSNÖK
ÉS MONOGRAMM KÉSZITŐ
BÉLYEGZŐK, PECSÉTNYOMÓK,
ARANY-EZÜST VÉSÉSEK
ÉS HIMZŐMINTÁK
Hirdetmé

Photo by A. W. Cutler

A SMALL CORNER STORE AT BUDAPEST WHERE RUBBER STAMPS, ETC., ARE BEING SOLD

The photograph was taken to show the intricacies of the Hungarian language. Extremely few foreigners can pronounce the words correctly, and no wonder! The Hungarian government has done remarkably well in educating the peasants in the last forty years. About 60 per cent can now read and write, and over 80 per cent of children of school age are attending school. This is a very good showing when it is remembered that until 1867, owing to almost continual internal disorders, the Hungarian government could do little to educate the peasants, few of whom could then read and write. The Magyar language is exclusively used in about 61 per cent of the schools, is partially used in 20 per cent of the other schools, and is becoming more and more the medium of communication throughout Hungary.

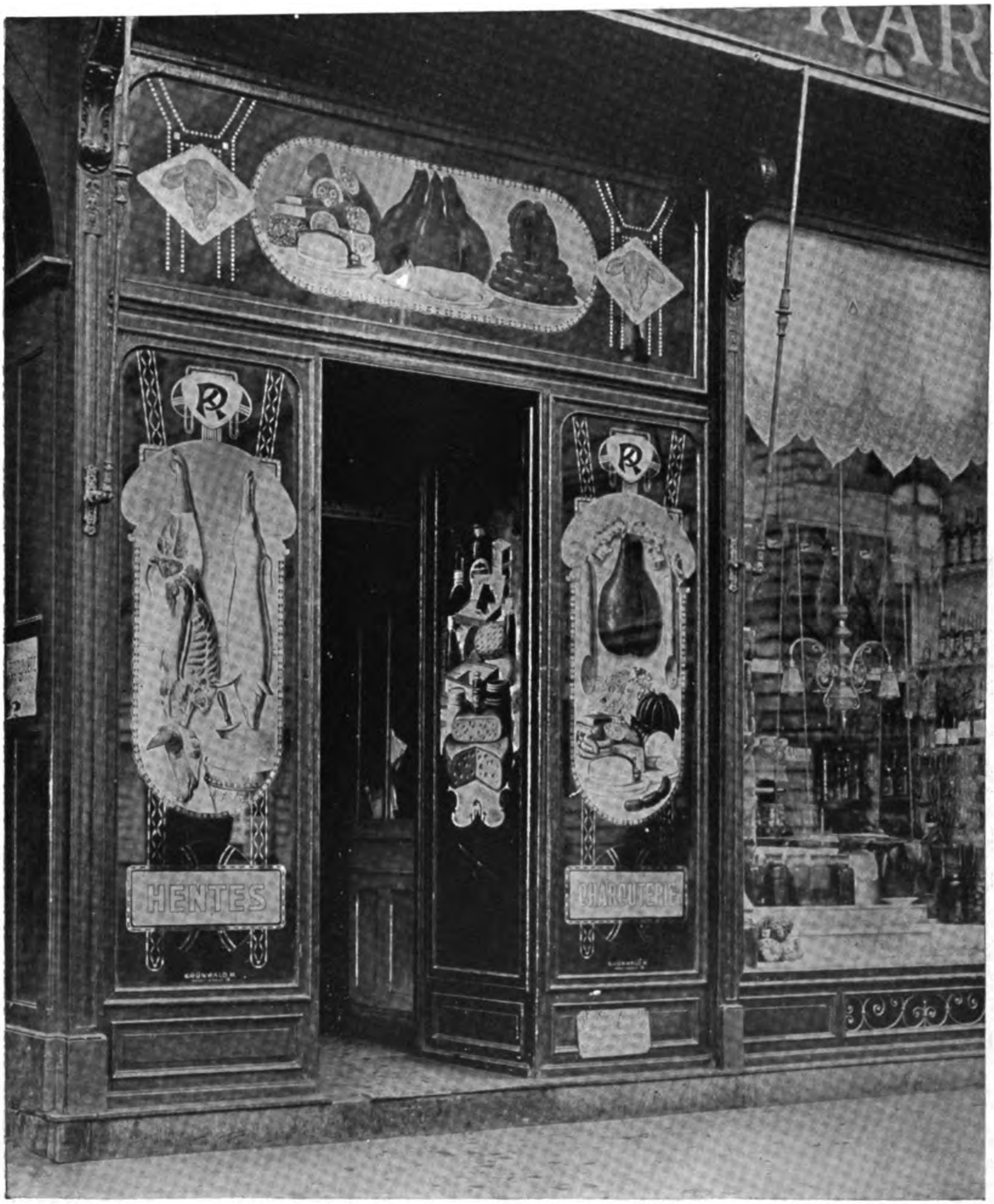


Photo by A. W. Cutler

IN ALL KINDS OF TRADES THROUGHOUT HUNGARY THE PRINCIPAL CONTENTS OF A STORE ARE ADVERTISED ON THE OUTSIDE IN THIS PICTORIAL MANNER

Hardware and dry-goods stores, and notably butchers and wine merchants, advertise their wares by means of colored pictures placed under glass at the entrance. The barber goes one better: above the threshold of his domain he suspends two highly polished brass discs, and on either side of the door the bust paintings of two extremely happy, prosperous-looking, and well-groomed gentlemen, the handsomest man invariably representing no less a personage than the proprietor himself.

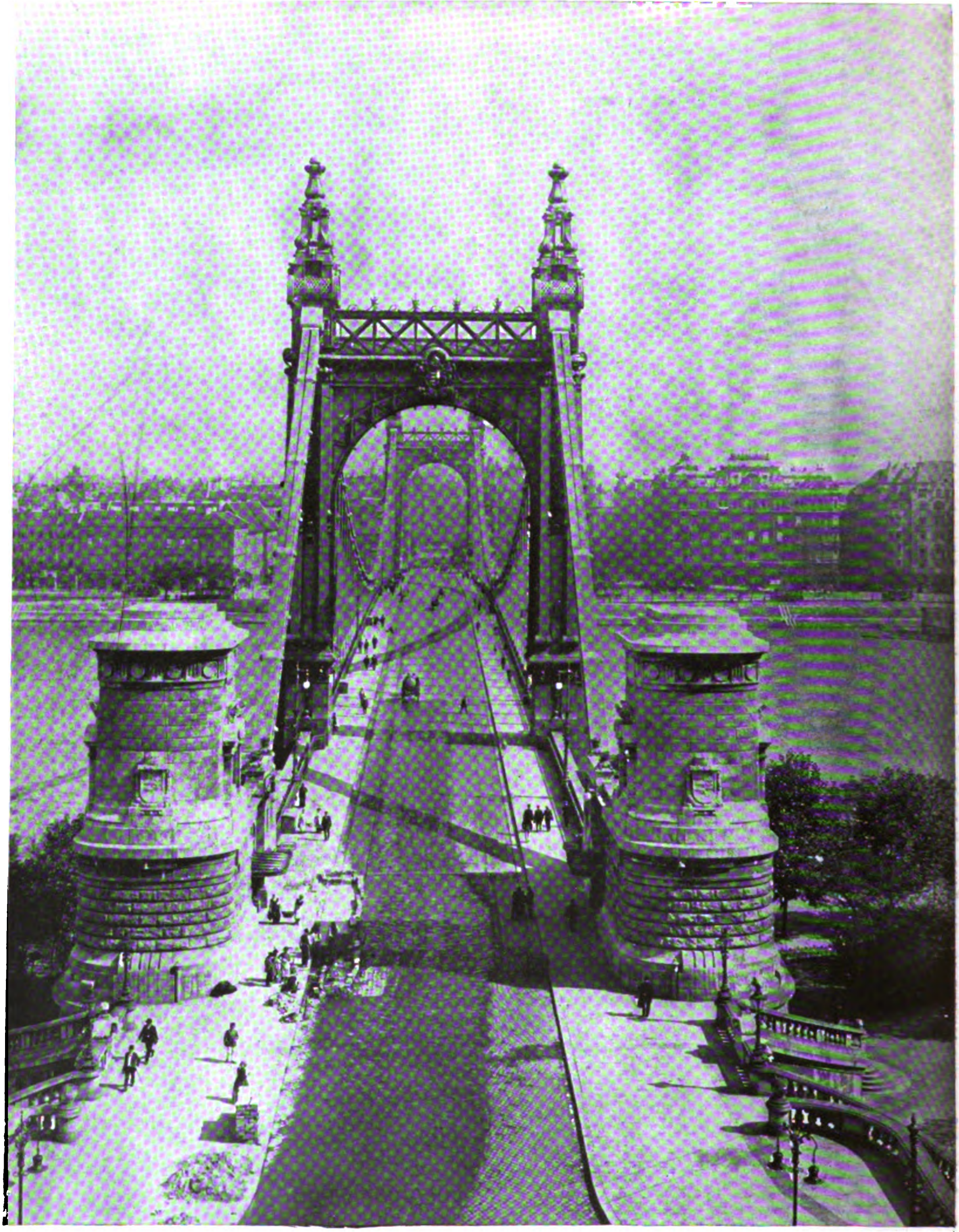


Photo by A. W. Cutler

LOOKING STRAIGHT ACROSS THE ELIZABETH BRIDGE FROM MT. GELBOT, ON THE BUDA SIDE: THE DANUBE DIVIDES THE TOWN INTO TWO PARTS—BUDA AND PEST

Buda is the old section and Pest the modern (see pages 346 and 347)

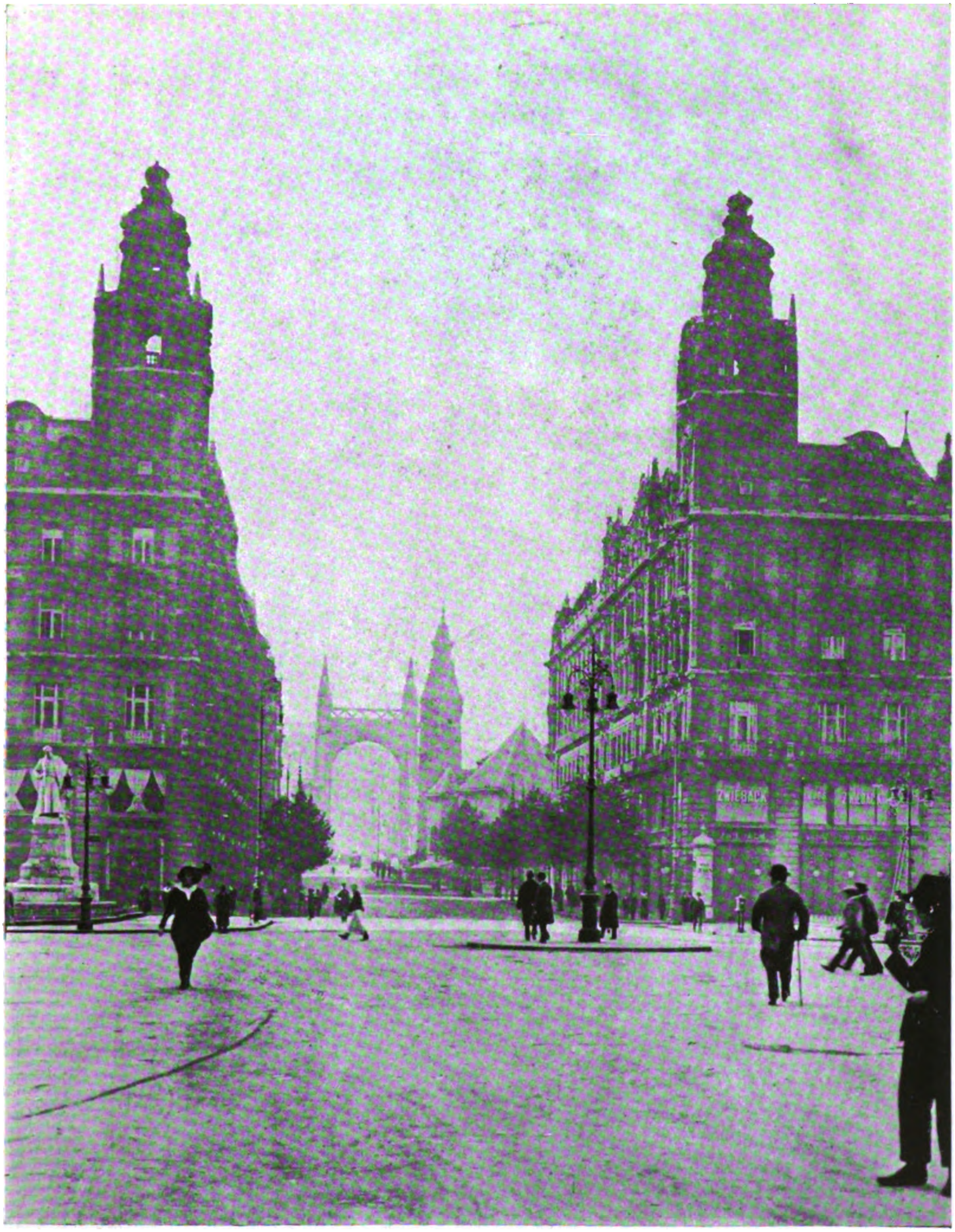
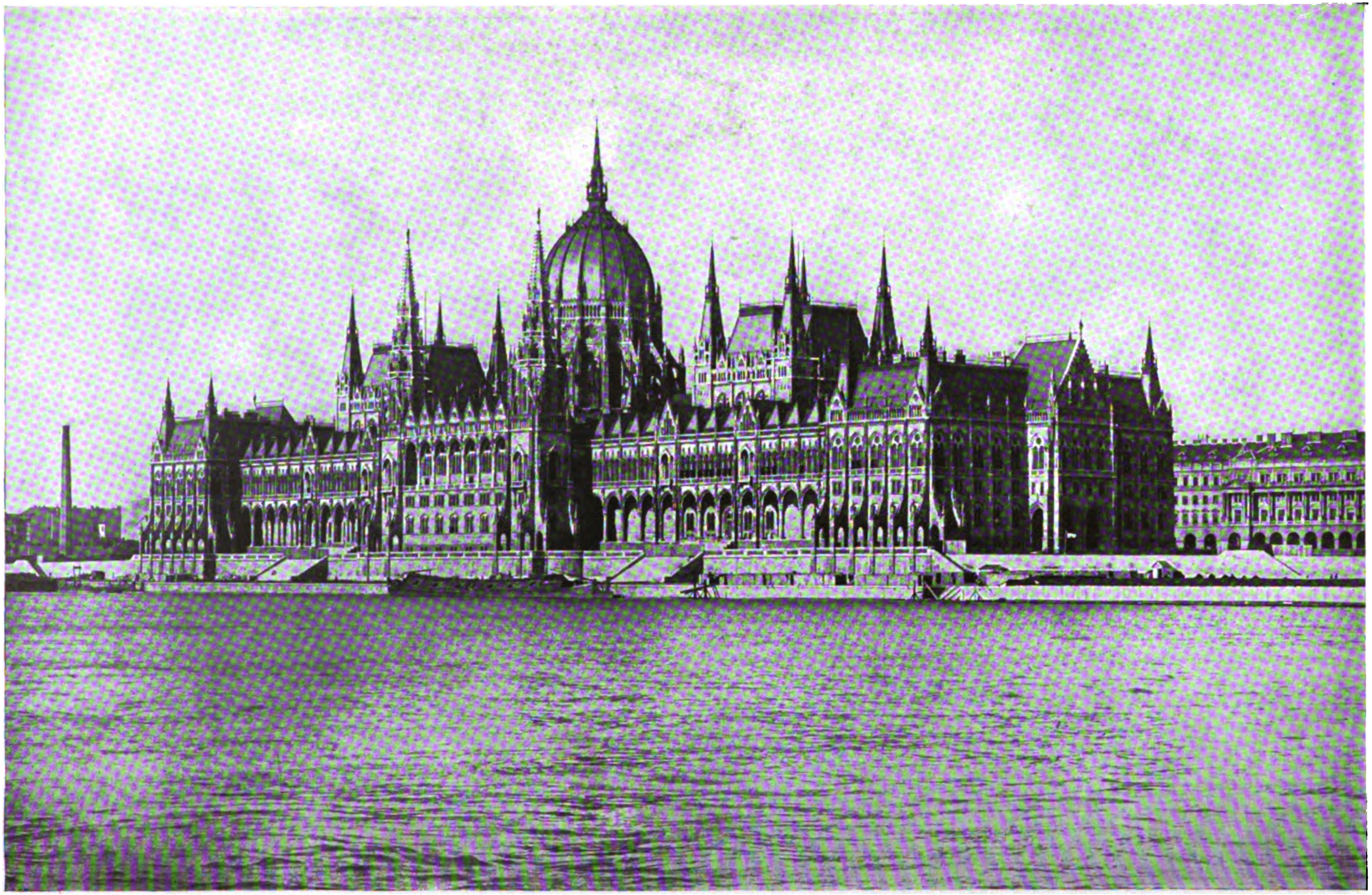


Photo by A. W. Cutler

TWO ANCIENT STRUCTURES BUILT EXACTLY THE SAME: THE CLOTILD PALACES

They are a famous landmark at Budapest, fronting on Louis Kossuth street, one of the most fashionable thoroughfares of the city. Hungarians are justly proud of their magnificent capital. A very short stay in Budapest is sufficient to convince the traveler that here is a country with a history as old as England, and a refinement of taste in the way of public buildings and monuments equal to any in Europe. The city is specially rich in elaborately carved statues of the great men of the past, Kossuth, the patriot, being the prime favorite.



THE HUNGARIAN PARLIAMENT AT BUDAPEST

"The subjects of hygiene, food adulteration, sanitation, the welfare of the child, and the proper treatment of the criminal have been taken in hand in a manner which sheds more luster upon the name of Magyar than do all the victories of the Árpád line. In the science of comparative sociology he gives law to the world. No article of food, from milk to meat, can be exposed for public sale in Budapest unexamined, unsealed, and unstamped" (see text, page 386).

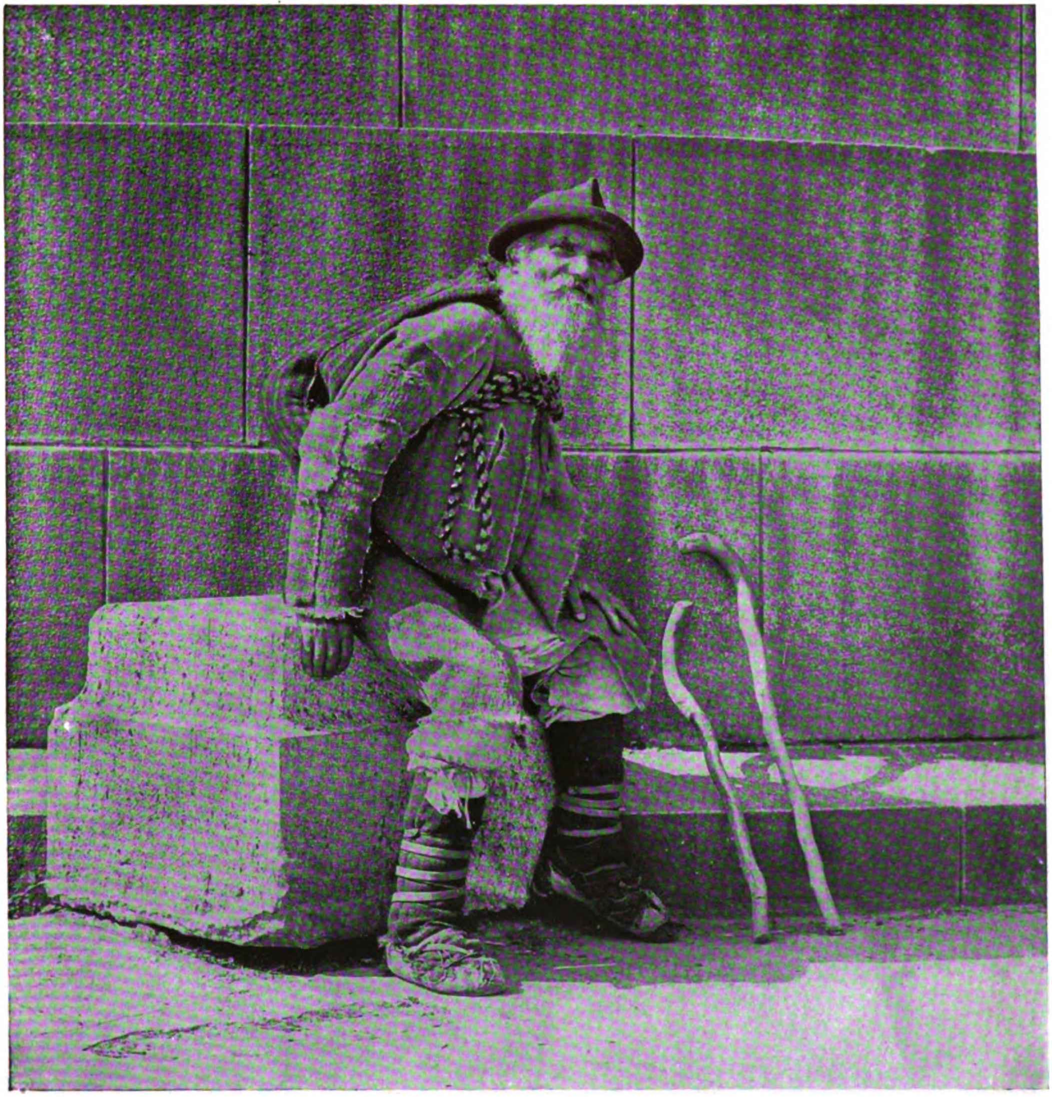


Photo by A. W. Cutler

PICTURESQUE TYPE SEEN TAKING A REST AGAINST ONE OF THE GREAT BRIDGE BUTTRESSES DOWN ON THE EMBANKMENT: BUDAPEST

He is a Servian. The pack on his back is tied on with the rope of a dressing-gown, evidently donated by some kind friend. The clothes are made of a very coarse homespun linen.

government are Europeanized, but they together do not represent .0005 of the nation, and the difference between a simple peasant and his rulers is the difference of old between a gondolier and one of the Council of Ten.

But this is the era of transition, and people even here are not always content to see the Ark of the Covenant guarded by extraneous forces calling themselves the executive, deriving from nowhere but possessing inherent powers. There are sporadic signs of discontent which the executive classes under the generic term Socialism. These ebullitions usually end in the confiscation of seditious journals (seditious journals are those not subsidized by the government).

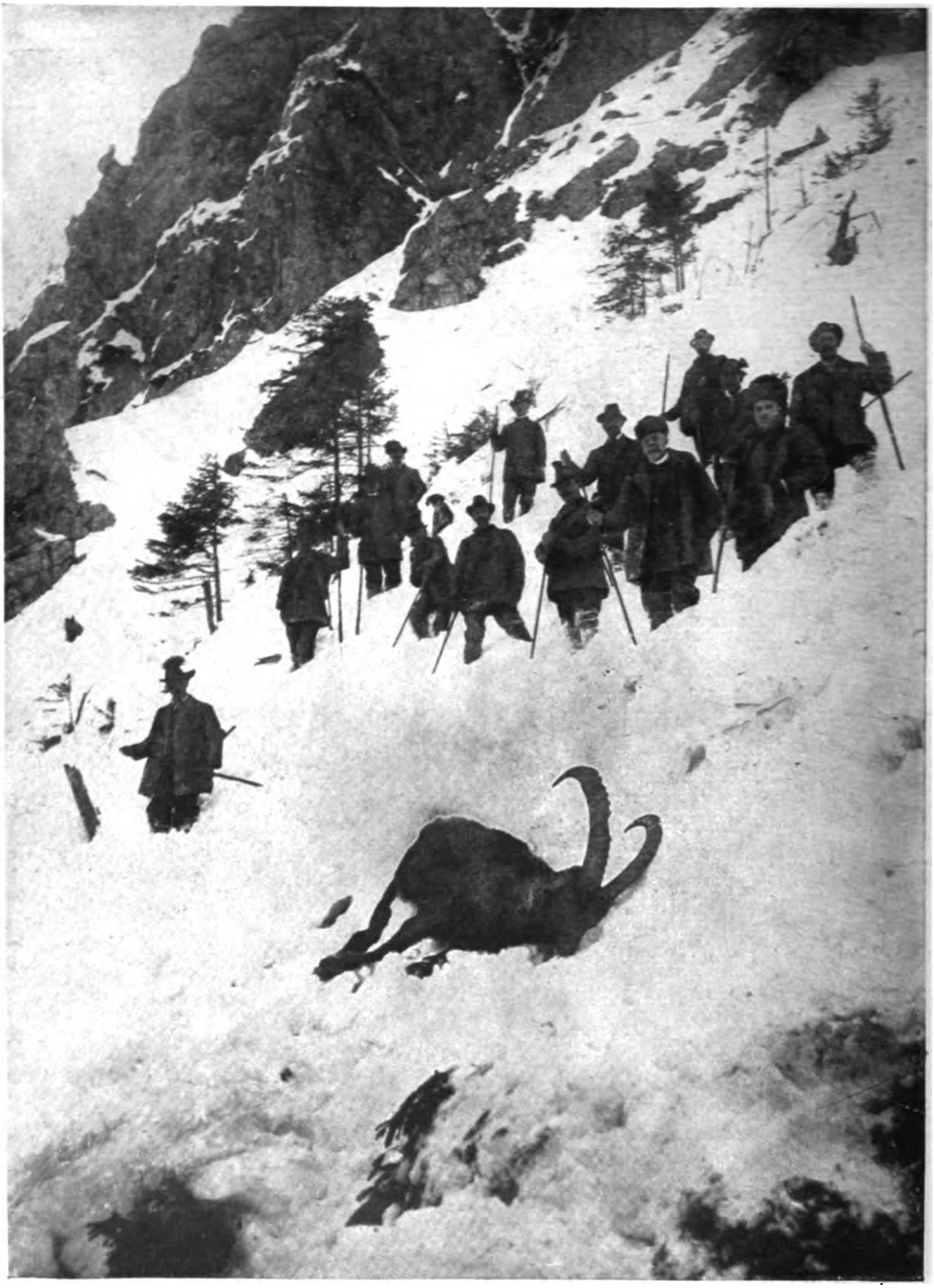
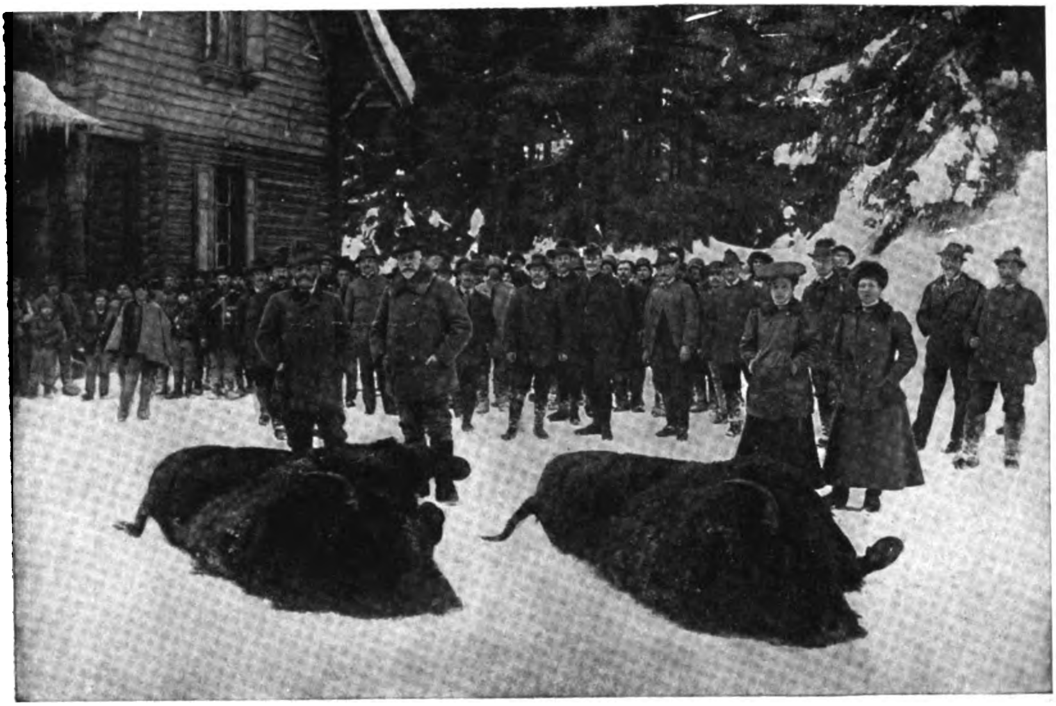


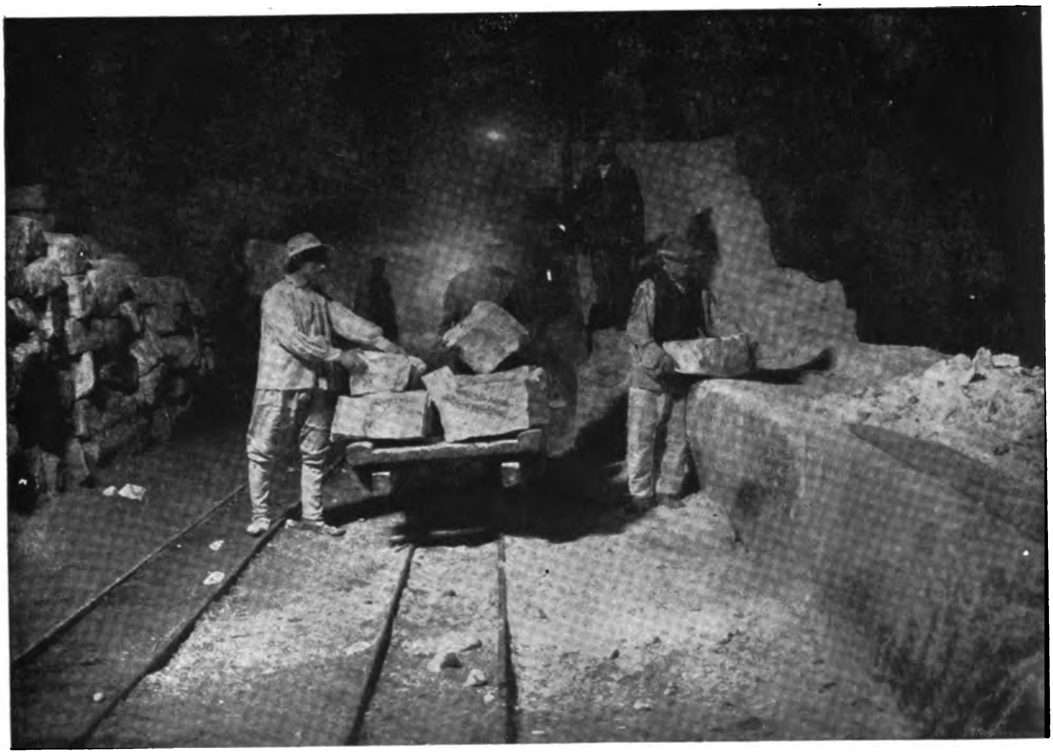
Photo by Erdelyi

CHAMOIS HUNTERS IN THE TATRA: NORTHERN HUNGARY

The chamois in summer go up into the high mountains to the perpetual snow-line, and feed only on mountain sides with a northern exposure. In winter they go down to the wooded lower reaches of the mountains, and it is here that they are hunted. They never graze without a sentinel on the lookout. The most successful way to hunt them is for a number of hunters to form a closing-in circle around a feeding ground. Great danger attends hunting in such high altitudes, but that has given such zest to the sport that the chamois is now rare where once it was numerous.



SPORT IN THE TATRA MOUNTAINS OF HUNGARY: BISON HUNTING



Photos by Erdelyi

A SALT MINE AT MAROSUJVAR, HUNGARY

Rock salt constitutes the world's principal supply of salt. Where it exists practically pure, as here, it is mined by cutting it up in blocks, after which it is sent to the grinding mills. Where it is not pure it is mined by dissolution in water, which is then pumped out and purified.

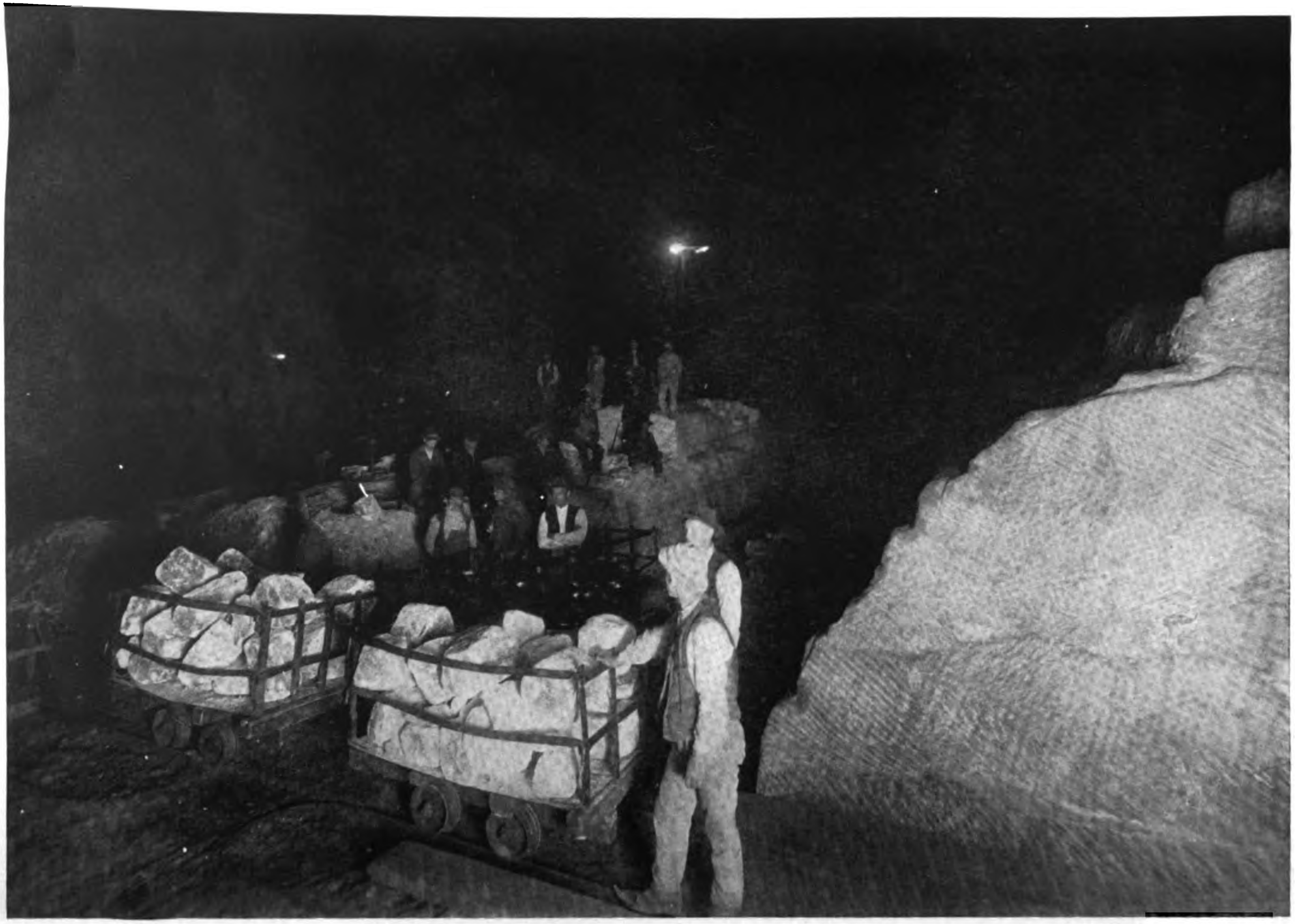


Photo by Erdelyi

ANOTHER VIEW IN A SALT MINE IN TRANSYLVANIAN HUNGARY: SALT WAS MINED IN THIS REGION BY THE ROMANS, VAST QUANTITIES BEING TAKEN OUT BY THEM

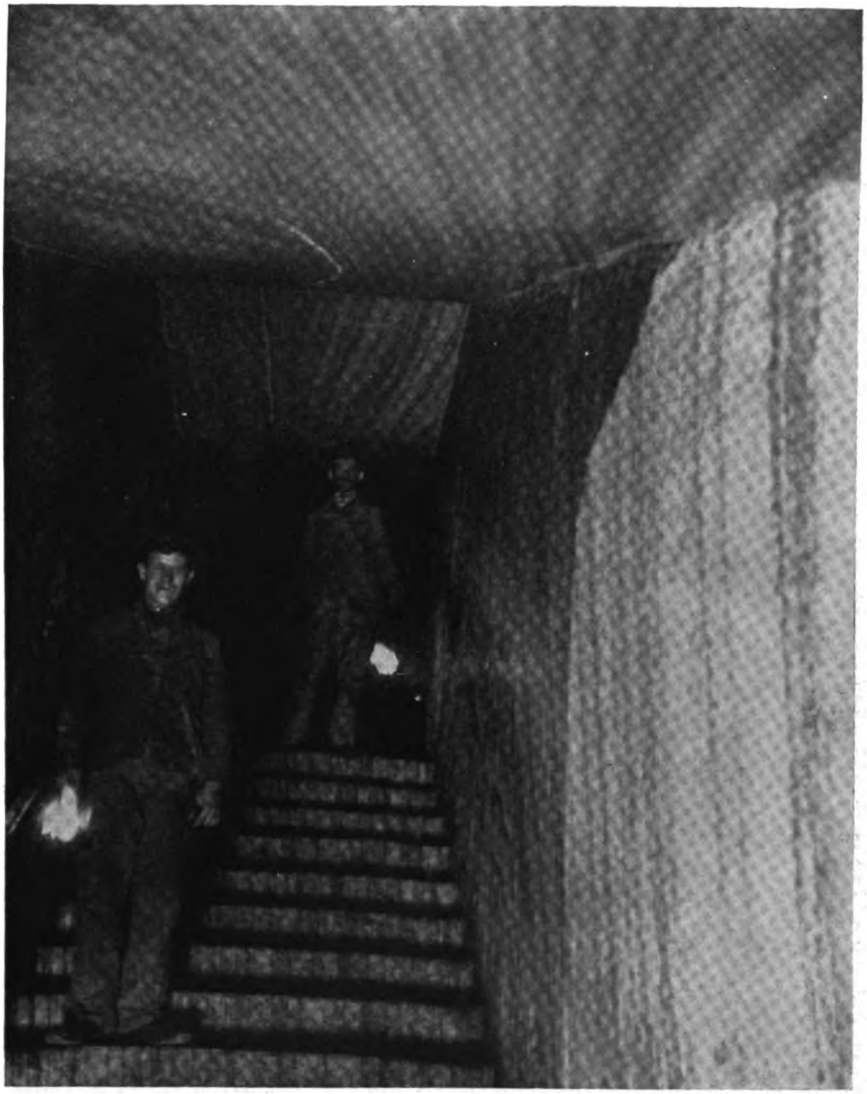


Photo by Erdelyi

THE SALT STAIRCASE AT MAROSUJVAR, HUNGARY

Salt deposits are believed to have been laid down by the subsidence of areas containing sea water, which evaporated, leaving the salt behind. These deposits occur in many parts of the world and are identified with a number of geologic ages.

That feeling which in England finds vent in a letter to the *Times,* or in extreme cases in a public meeting, finds its outlet here in the stoning of coffee-house windows by a free people and in the refusal to pass the budget by the representatives of the free people. Usually a government in a minority and unable to secure appropriation under constitutional forms retires.

In Hungary the government need not possess even its own confidence; it being the government of the King, all that is needed is Royal approval. The King's government must be carried on, but one thing it cannot do. Without the consent of Parliament it cannot levy nor collect taxes. But it can borrow; it can incur liabilities, and some day an indemnity bill, extorted by concessions which amount to nothing, sets all things straight.

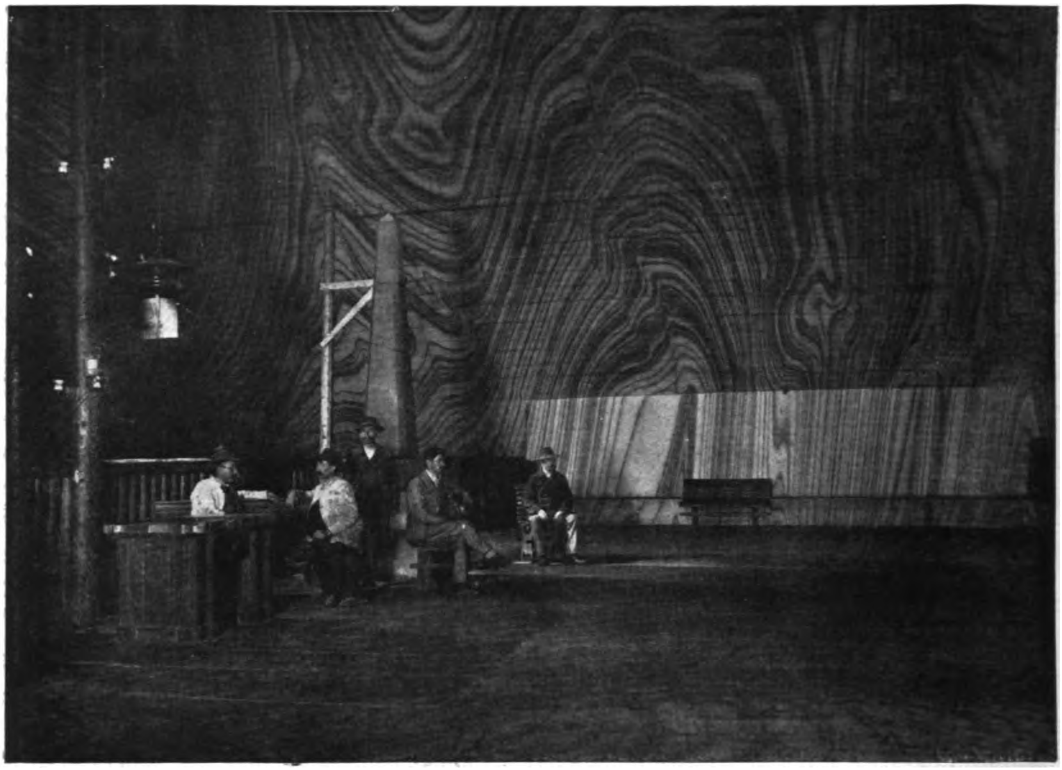


Photo by Erdelyi

THE "BALL-ROOM" OF THE SALT MINE AT MAROSUJVAR, IN TRANSYLVANIAN HUNGARY, NEAR THE ROUMANIAN BOUNDARY

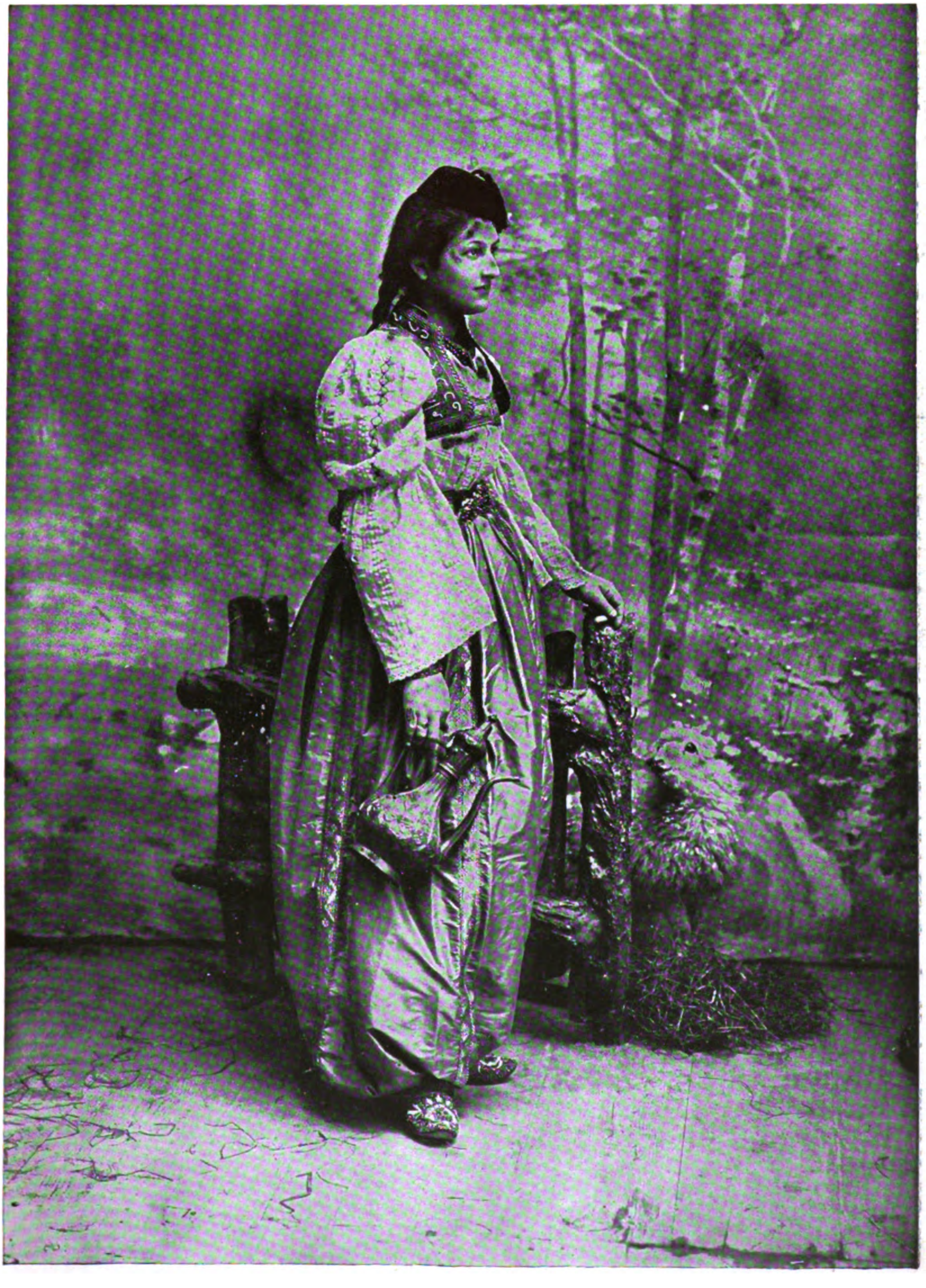
Rock salt, when pure, is transparent and colorless, but usually is found with an admixture of ferric oxide or hydroxide. It then assumes the beautiful colorings of rare marble and color-grained onyx.

Government by Intellectuals is necessarily patriarchal, but it is at least at liberty to exhaust upon the country a succession of political theories from which governments under popular control would shrink. I do not suggest that the system is bad, nor even ill-adapted to the requirements of the situation. What I do say is that it is neither representative nor constitutional, as those terms are understood by Anglo-Saxon peoples, nor can all the mass of public-law formulæ, charters, treaties, customs, and legal enactments make it either representative or constitutional.

Partly as a result of a certain irresponsibility, partly in pursuance of the wise policy of taking all that is good and helpful from the experience of other peoples, in part, again, by reason of keen political insight and desire of novelty, what may be termed the sociological side of racial problems has received an amount of concentrated attention which other Parliaments, bound to take into account foreign policy, colonies, immigration, trust, commercial, and cognate affairs, have been obliged to dissipate.

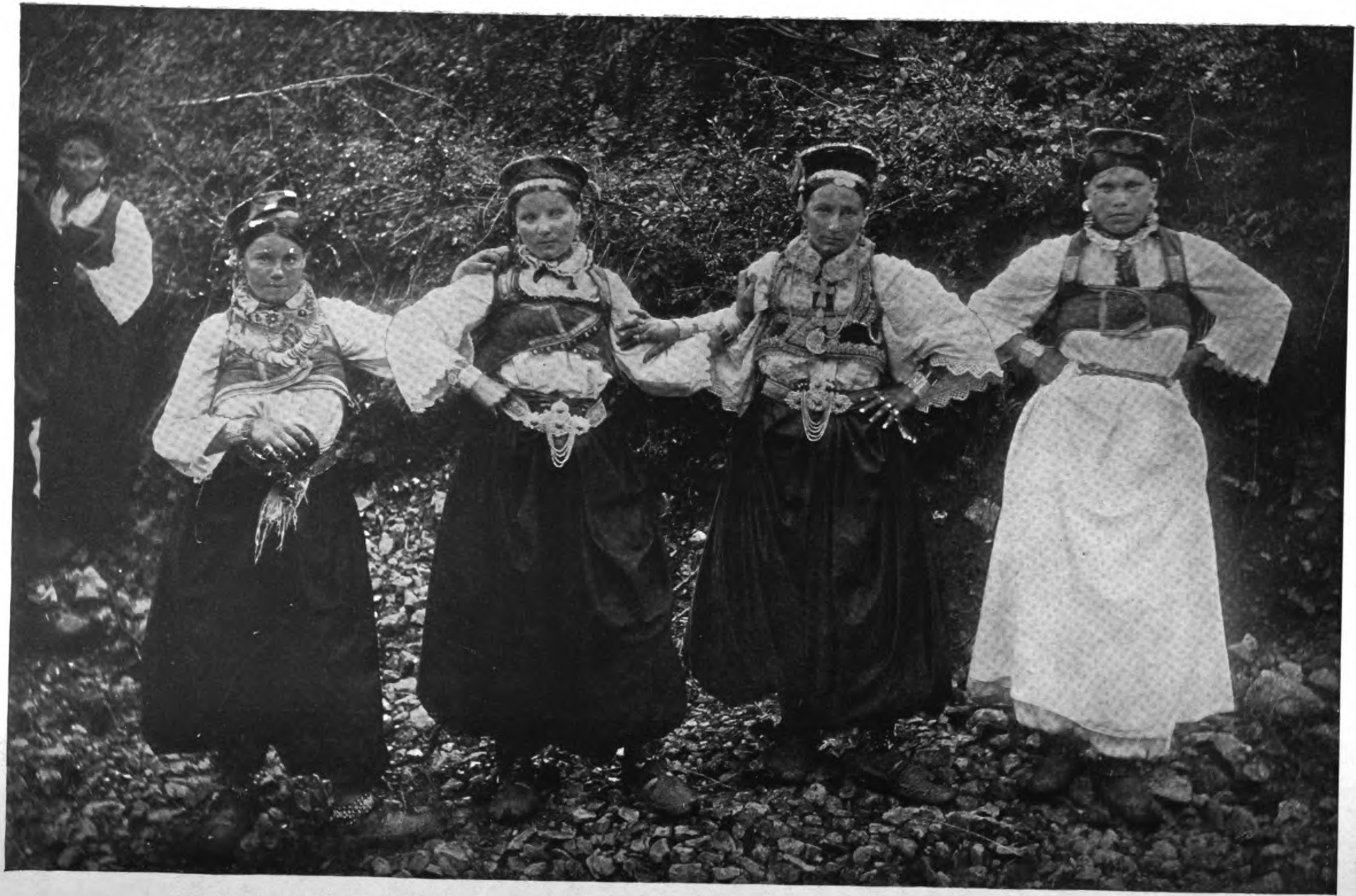
The result is that the subjects of hygiene, food adulteration, sanitation, the welfare of the child, and the proper treatment of the criminal have been taken in hand in a manner which sheds more luster upon the name of Magyar than do all the victories of the Arpád line. In the science of comparative sociology he gives law to the world. No article of food, from milk to meat, can be exposed for public sale in Budapest unexamined, unsealed, and unstamped.

Whereas punishment in English law is made to fit the crime, in Hungarian law

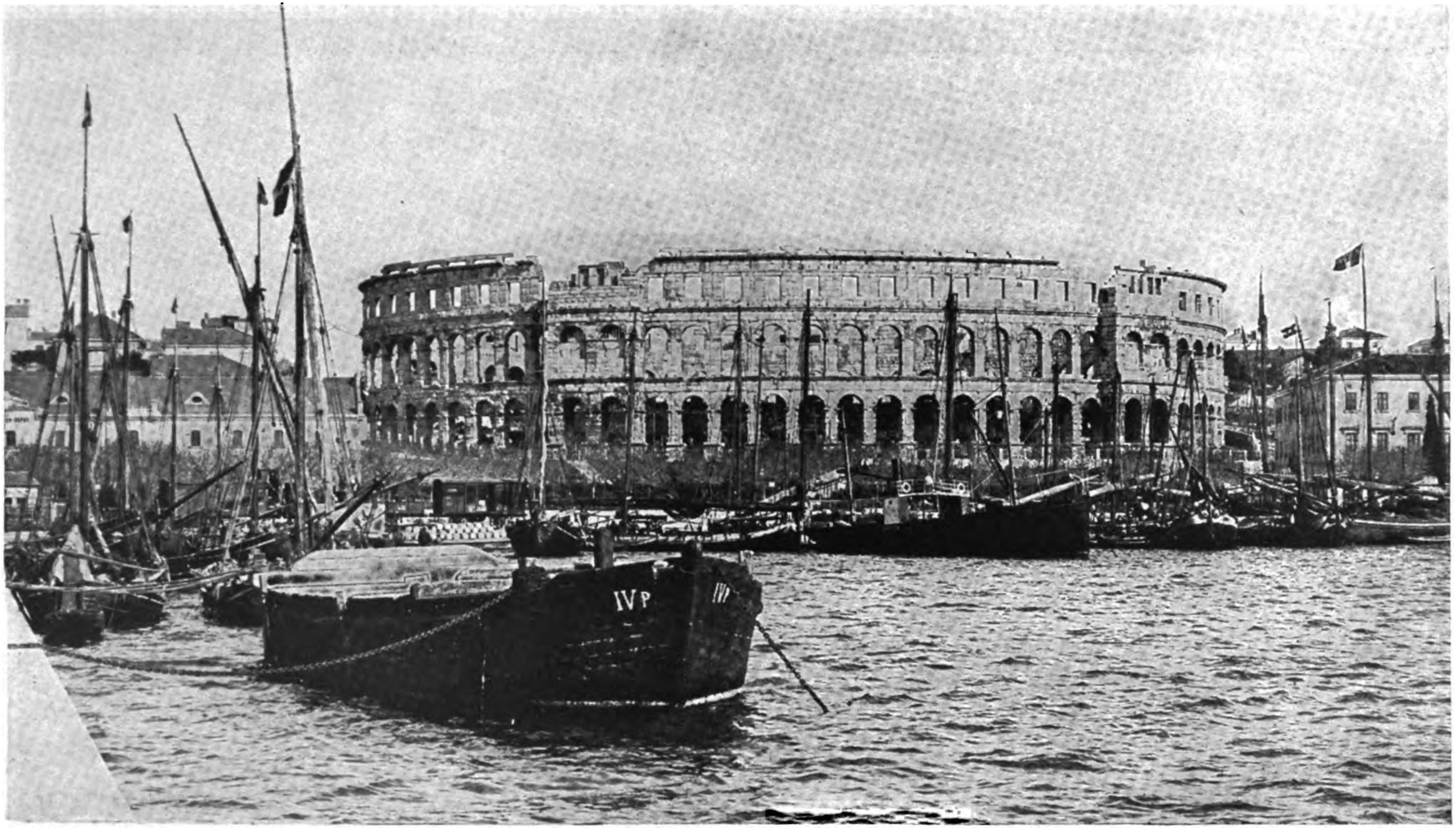


A GIRL IN SERAJEVO, THE CAPITAL OF BOSNIA, AUSTRIA-HUNGARY

For the loveliness of its surroundings and the beauty of its women, Serajevo has been noted for centuries. It is a cruel fate that because of a madman's act Serajevo will hereafter be remembered only as the scene of the murder of the Crown Prince of Austria-Hungary, which precipitated the most terrible war of modern times.



PEASANT GIRLS IN THE SUBURBS OF SERAJEVO, THE CAPITAL OF BOSNIA, AUSTRIA-HUNGARY



ARENA SEEN FROM THE SEA AT POLA, AUSTRIA-HUNGARY

Pola is said by some to have been founded in the middle of the fourteenth century B. C. by the Colchians, who pursued Jason in order to recover the Golden Fleece which he carried off. More probably it was founded by the Thracians, who dwelt near the banks of the Danube. The amphitheater dates from the period of Antonines. It is 75 feet in height, 333 feet in diameter, and could seat 15,000 persons. The city lies at the head of the Bay of Pola and is Austria-Hungary's naval stronghold.

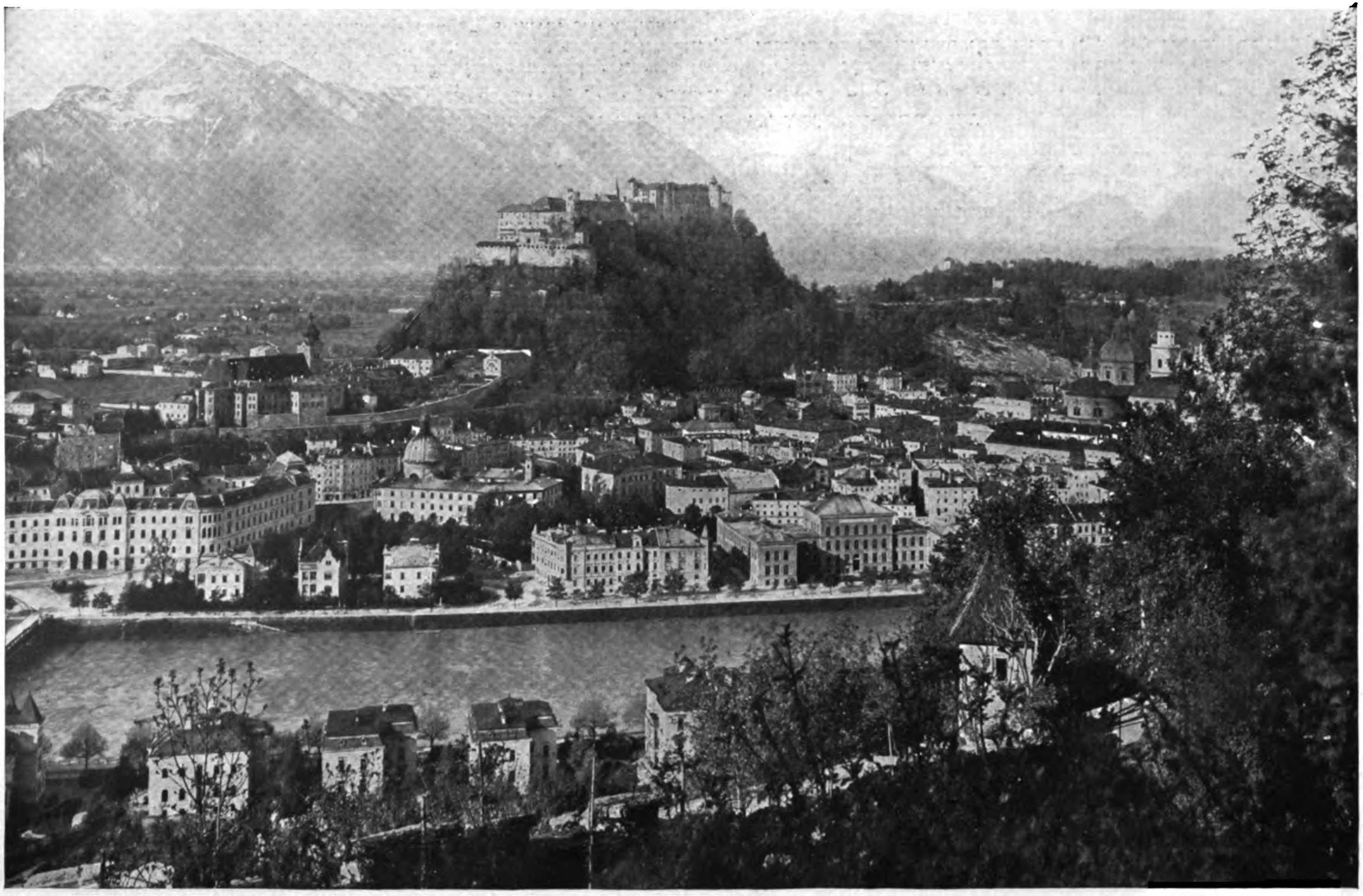


Photo from D. W. Iddings

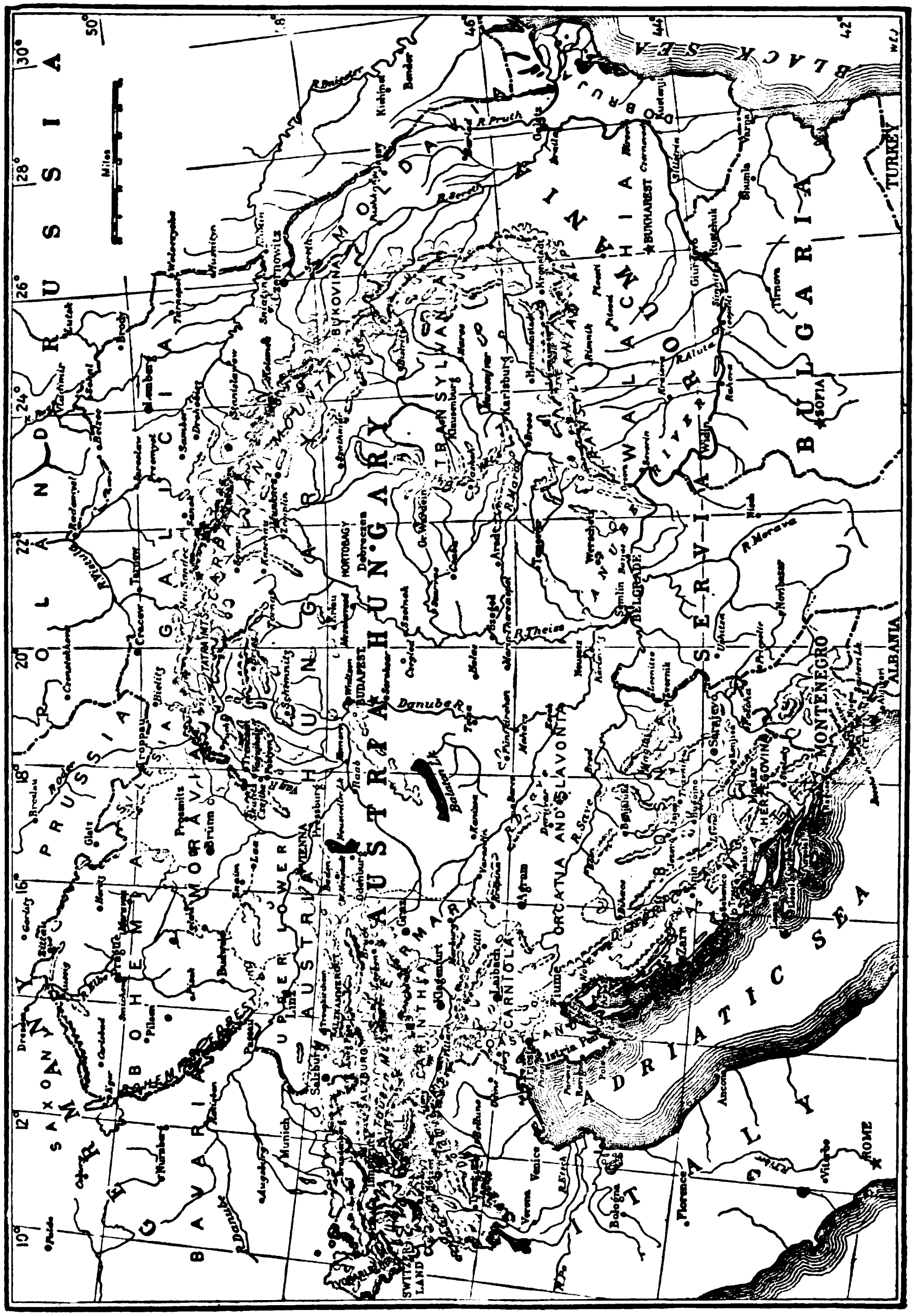
SALZBURG, ACCORDING TO HUMBOLDT, ONE OF THE THREE MOST BEAUTIFUL CITIES IN THE WORLD: IN AUSTRIA

The city is famous for its picturesque location between two great hills, which form here the valley of the Salzach. The citadel dates from the ninth century, although the present buildings were constructed at the beginning of the sixteenth

Photo from Hilda H. Wheeler

THE RUIN OF AGGSTEIN, ON THE DANUBE, 55 MILES WEST OF VIENNA, AUSTRIA

Rising in the Black Forest in Germany, the Danube flows eastward by a very meandering course, 1,800 miles long, into the Black Sea. Vienna, Budapest, and Belgrade are upon its banks, and by means of many tributaries it drains southern Germany, large portions of Austria-Hungary, Servia, Bulgaria, and Roumania. Few rivers in the world carry a greater commerce than the Danube or have played so important a part in history.


RUSSIA
POLAND
PRUSSIA
SAXONY
BAVARIA
BOHEMIA
MORAVIA
SILESIA
GALICIA
BUKOVINA
MOLDAVIA
BESSARABIA
TRANSYLVANIA
HUNGARY
AUSTRIA
UPPER AUSTRIA
LOWER AUSTRIA
SALZBURG
TYROL
CARINTHIA
STYRIA
CARNIOLA
CROATIA AND SLAVONIA
BOSNIA
HERZEGOVINA
DALMATIA
MONTENEGRO
SERVIA
ROUMANIA
WALLACHIA
BULGARIA
TURKEY
ALBANIA
ITALY
SWITZERLAND
ADRIATIC SEA
BLACK SEA
CARPATHIAN MTS.
TRANSYLVANIAN ALPS
VIENNA
BUDAPEST
BELGRADE
BUKHAREST
SOFIA
Prague
Cracow
Lemberg
Czernowitz
Brünn
Linz
Salzburg
Graz
Laibach
Trieste
Fiume
Agram
Pressburg
Debreczen
Szegedin
Temesvar
Klausenburg
Sarajevo
Munich
Venice
Rome
Danube R.
R. Theiss
R. Pruth
Lake Balaton
Miles
10°
12°
16°
18°
20°
22°
24°
26°
28°
30°
42°
44°
46°
48°
50°

OUTLINE MAP OF AUSTRIA-HUNGARY

]

it is made to fit the criminal. The illegitimate child, which in England bears a brand a little more shameful than that of Cain, is here treated as an ordinary citizen, on the very sound principle that if the child is responsible for the sin of his birth the responsibility of the High Gods must be unbearable.

Throughout the length and breadth of this fair land there is no rabbit warren to compare with the insanitary areas of London or New York. There is neither squalor nor drunkenness like to that in Anglo-Saxon communities. The child which goes barefoot does so of his own free will. The man who goes in rags may do so for a freak wager, but never of necessity. It may be that the people are few on the ground and competition not so terribly keen, but it is a good people, and the poor help the poor.

For his courtesy to the stranger and his goodness to his own; for his lordly hospitality; for his vivacity and simple faith in the ultimate; for his unconquerable spirit and scorn of the wrong, and for all the qualities of heart and nerve which have helped to preserve his heritage for himself, and himself for his sturdy children, God bless this true son of a lion breed wherever he be, and smile upon his golden fields and rolling meadows, and the little saint which, day and night, guards his crops.

THE OLDEST NATION OF EUROPE

Geographical Factors in the Strength of Modern England

By Roland G. Usher

Professor of History, Washington University

UNLESS some military genius of the first order should appear on the one side or the other or some terrible blunder be committed, the outcome of the present war may depend more upon the relative strength of the States involved than upon the deeds of their armies. Conceivably, even the ability to keep armies in the field may be determined by forces not military at all and possibly not at this moment related to the general issue of the war.

Certain European writers have produced so formidable a series of statements which lead, as they insist, to the conclusion that England is not only decadent at present, but never has been strong, that it may be worth while to examine at some length the general premises of English history and geography.

The general contention of these writers is that England is strong because of her fleet, because of her colonies and dependencies, rather than because of factors inherent in her situation. They look at the obvious facts, which, of course, are not to be denied, that England is, in total area, much smaller than the other Great Powers; that the proportion of arable land in England is smaller than it is in France or Germany; that its fertility is less than that of the average land in the two latter. From her own resources, therefore, England should not be able to support anything like as large a population as easily as other nations should.

In the long run everything goes back to the land, and certain schools of economists have insisted that the normal, natural strength of a nation should roughly approximate its natural resources. The fact that England, with proportionately less natural resources, has for a century or more supported a large population in relatively greater comfort with relatively greater ease than other nations have demonstrates to many that England must be an artificial, and therefore vulnerable, structure.

In such statements there is so much that is true and so much more that is specious that the conclusion drawn from them is only too likely to seem inevitable

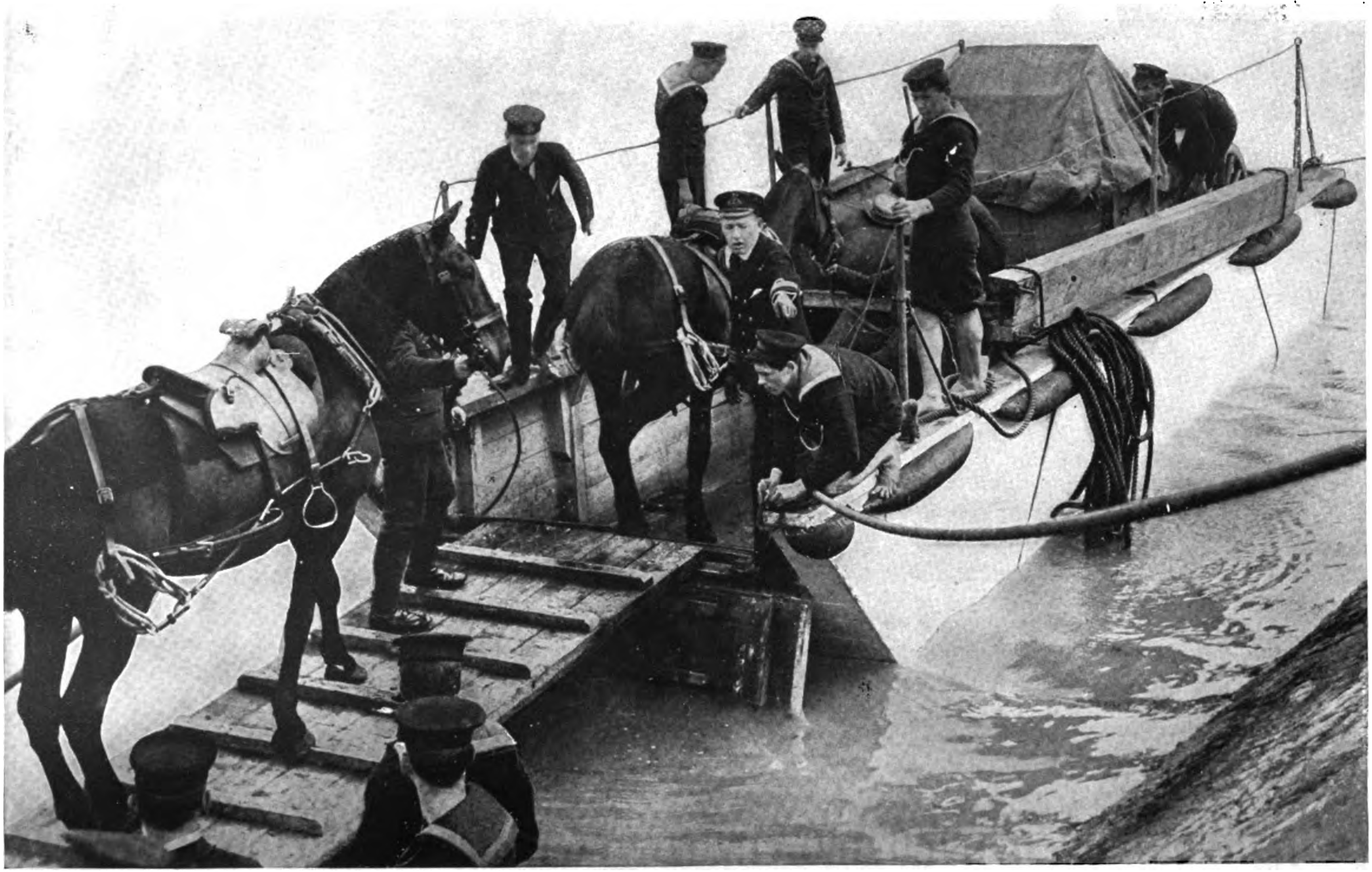


Photo and copyright by Underwood & Underwood

ENGLISH NAVY SERVICE CORPS EMBARKING WITH GUN AND HORSES AT SOUTHSEA, ENGLAND

"France and Germany have not yet attained, the majority of their people still dream of, the territorial unity and 'natural frontiers' which England attained centuries ago. To all intents and purposes, England was in 1087, at the death of William the Conqueror, what she is now" (see text, page 395).

to those who pursue their inquiry no further. England's preëminence and predominance are, however, the result of geographical and economic factors of the utmost potency, but of the utmost peculiarity. They are, in fact, so unique that if we had not the evidence of their formative power in the events of English history we should be inclined to doubt their significance.

Great geographical and economic forces have built up a political and economic fabric of unquestioned significance which as surely exists as the sun in the heavens, and whose existence is not to be disproved by demonstrating that the forces which created it have done their work.

THE ESSENTIALS OF NATIONALITY

Let us enumerate the essential features of national existence as we now understand them and compare the periods at which they were achieved by England and by the other countries in Europe.

First and foremost, territorial unity in the sense of the possession by the State of a geographical entity, with, if possible, such natural frontiers as the Pyrenees form for Spain and the Alps for Italy.

In the second place, racial unity, which assumes that the people inhabiting this geographical unit have lost consciousness of any differences of racial origin and regard themselves as one people.

Thirdly, religious unity, at least to such an extent that toleration of individual beliefs is recognized as an accepted principle by the State. We no longer demand as religious unity identity of opinion, but we at least premise as an important factor in national consciousness a substantial tolerance by the state of differences of opinion.

Fourthly, patriotism, the consciousness in the vast body of the people of this unity of territory, of race, and religion, and of a consequent unity of aim and purpose. It presumes the active existence of common consciousness, of common ideals, both present and future.

Fifthly, unity of administration, not only such externals as allegiance to the same sovereign or to the same constitution, but a very real unity of governmental ideals, by which we mean that the overwhelming majority of the people are so well satisfied with the general form of government and the general results of its operation that they have no wish to change it. This does not, of course, preclude strong differences of opinion in great sections of the people on questions of policy, but it does assume a very real agreement on everything at all fundamental.

GREAT BRITAIN'S TERRITORIAL UNITY ATTAINED CENTURIES EARLIER THAN THAT OF ANY OTHER COUNTRY IN EUROPE

France and Germany have not yet attained, the majority of their people still dream of, the territorial unity and "natural frontiers" which England attained centuries ago. To all intents and purposes, England was in 1087, at the death of William the Conqueror, what she is now. The fact that both William and his immediate successors owned great estates upon the continent must not conceal from us, as students, the essential fact that territorial unity in England has been practically a reality since his time. Since the close of the Hundred Years' War, at the very latest, England has not owned, nor have the English people desired, land on the continent of Europe. The single port of Calais remained for another century as the reminder of what had been; but already, in the reign of Henry VII, Englishmen were reconciled to the limitation of their boundaries to the "tight little isle."

Spain did not obtain a territorial unity similar to England's on the death of William the Conqueror until the close of the fifteenth century, and the more closely Spanish history is studied the clearer does it become that this territorial unity was more nominal than real.

France waited until the sixteenth century, Germany and Italy until the nineteenth century, to attain even formal territorial unity by bringing under one government all the territory which those nations now possess.

There are, of course, many qualifications and reservations to be made in connection with any such series of broad statements as these, but after all possible deductions have been made, England attained territorial unity centuries before other nations.

Furthermore, the geographical formation of the British Isles gave the English from the first supremacy among the various peoples living in them. England is the great plain sloping from the Welsh Mountains to the Channel and the North Sea, and was from the first capable of supporting a population so much larger than could be maintained in the mountains of Wales and Scotland or in the bogs of Ireland that the ultimate predominance of England in the British Isles has not been at any time in doubt since the time of the Conqueror.

The territorial integrity of England was assured in the Middle Ages to an extent to which the territorial integrity of France and Germany has still to attain.

The importance of this achievement is apparent when we remember that until territorial unity has become something more than a figment of the imagination the racial cohesion of the peoples who are finally to become a nation by the attainment of political consciousness of a common aim and purpose cannot much more than begin; until the pieces are at least assembled upon the table the completion of the picture will be impossible. The early attainment of territorial unity by England to a large extent explains the early attainment of racial unity.

THE ENGLISHMAN IS THE PRODUCT OF 800 YEARS OF WELDING

Since 1066 there has been no considerable accession of racial elements, and the varied peoples of Teutonic stock who happened to be in England at that time were compelled to amalgamate by their close proximity to each other on a small island, from which the Channel made it difficult for them to emigrate. The "true-born Englishman" who excited at one time the derision of a pamphleteer named Daniel Defoe is not less a reality because he proceeded from the blending of Saxons, Angles, Danes, and Normans.

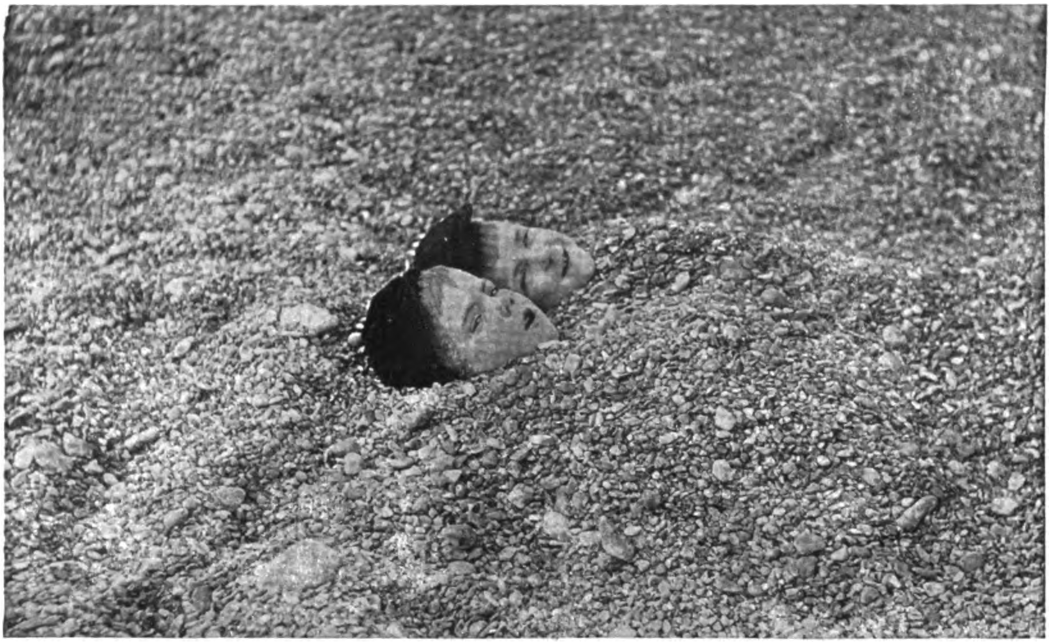
The greatest achievement of the careful researches of the late Bishop of Oxford into the constitutional history of England was the conclusive establishment of the fact that by the close of the thirteenth century the consciousness in the people of any difference in ancestry had entirely disappeared. They were no longer Normans, Saxons, Danes; they were all English.

This racial unity, of which the English people became conscious about 1307, did not appear in other nations of Europe for centuries. A study of the Hundred Years' War has shown us only too clearly that the war was less one between Englishmen and Frenchmen than between northern and southern France. The English kings held for generations large sections of France, not as Englishmen, but as Frenchmen, and waged against the French kings far less an international conflict than a feudal war in which the most powerful vassals of the French king were leagued together to compass his destruction.

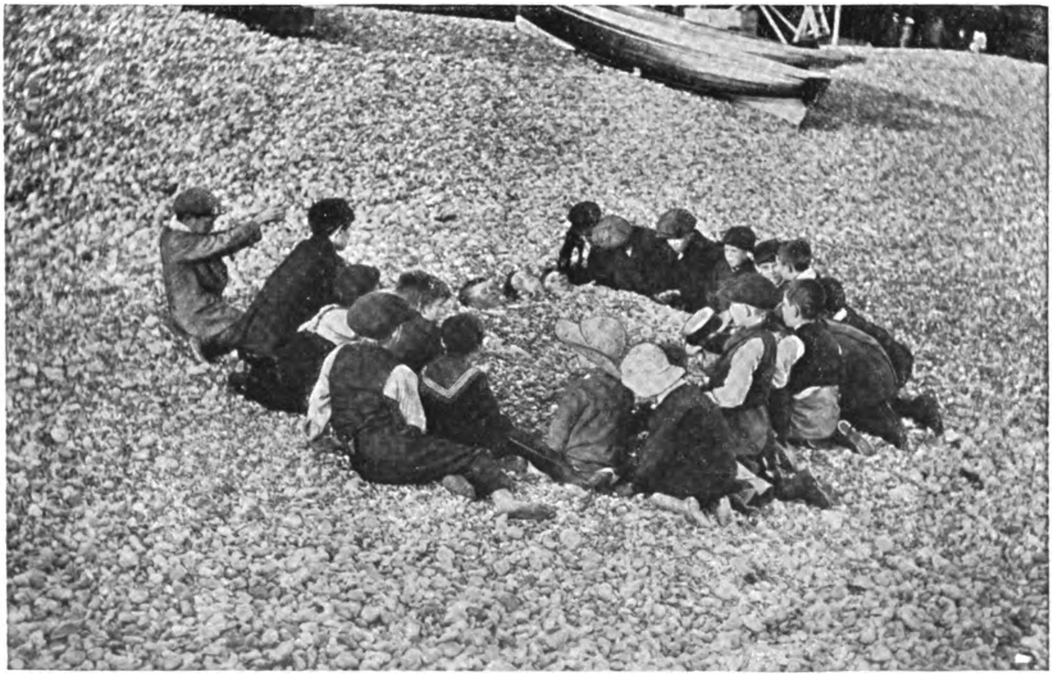
The rivalries of French parties made the English successful, and the miracle accomplished by Jeanne d'Arc was simply the uniting of all Frenchmen around the Crown, and was, in the truest sense, deserving of all the praise and attention it has received since, for it portended nothing less than the beginning in all sections of the French people of a consciousness of racial unity and national purpose.

During the succeeding century the Reformation in Germany and in the seventeenth century, the Thirty Years' War demonstrate to the least informed a total lack among the German people of any consciousness of racial unity. The shadowy empire was Austrian, and the word *German* itself, like the word *Germany*, was a phrase and not a reality; indeed, a word little used by men of the period. Surely the fact that Englishmen began to grow together and become conscious of their common blood in the eleventh century is a striking and important fact, explaining something of England's strength, when we remember how long the European countries waited before beginning the same process.

The important results attained for England by this early commencement of national growth will be more appreciated when we remember that nationality is the



NOT THE REMAINS OF A GRUESOME TRAGEDY, BUT A REVISED VERSION OF THE "BABES IN THE WOOD," SEEN ON THE PEBBLY BEACH AT BRIGHTON, ENGLAND



A BURYING BEE AT BRIGHTON, ENGLAND

Photos by A. W. Cutler

The small, round pebbles on the beach lend themselves irresistibly to this form of amusement

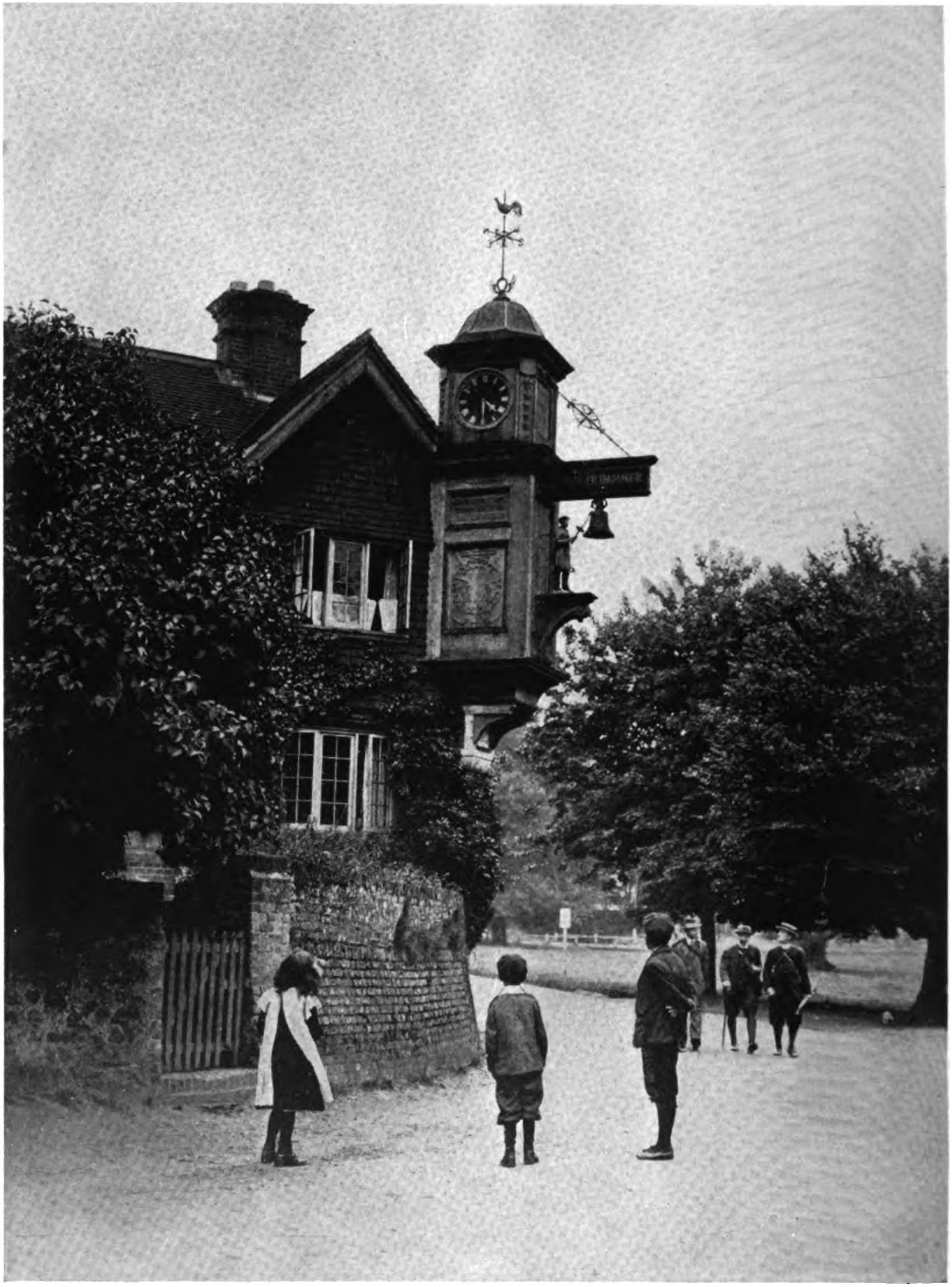


Photo by A. W. Cutler

ANCIENT CLOCK OVERHANGING THE HIGH ROAD AT ABINGER HAMMER, SURREY

The little man strikes the bell with his hammer at the hour. The clock is of great interest to pedestrians and automobilists as they pass beneath. "At the close of the thirteenth century the consciousness in the people of any difference in ancestry had entirely disappeared. They were no longer Normans, Saxons, Danes; they were all English. This racial unity, of which the English people became conscious about 1307, did not appear in other nations of Europe for centuries" (see text, page 396).

product of the actual living of a people and their descendants upon the same territory. It is of necessity a long growth, because it cannot be thoroughly real until these millions of people actually do see, eye to eye, on the most essential subjects and actually do feel for each other that sympathy and mutual interest without which the national tie can never be strong or enduring. Such a feeling invariably precedes nationality, often by centuries. One has only to compare a Frenchman in the armies of the Hundred Years' War or a German in Wallenstein's camp with a Frenchman of the time of Napoleon or with a German of the present day to see how very real and striking this difference is. There can be very little question that the English attained some actually national consciousness by the end of Elizabeth's reign.

RELIGIOUS DIFFERENCES WERE COMPROMISED IN ENGLAND, WHEREAS THE CONTINENT WAS RAVAGED BY RELIGIOUS WARS

One of the great causes of disunion, one of the great hindrances to the formation of one nation out of the people of French stock scattered between the Mediterranean and the English Channel, and those of German stock between the Alps and the Baltic, was the perpetuation for at least two centuries of the cleavage between Protestant and Catholic. Whatever we may feel in regard to the eventual gains of civilization due to the Protestant Reformation, we cannot fail to see that in some nations of Europe it tended to retard national unity. So long as Protestant Germans preferred an alliance with Protestant countries to an alliance with Catholic Germans, Germany, as a united nation, could be no more than a formal phrase.

Early in the seventeenth century the English produced a working compromise between Catholic and Protestant which wiped out the religious line in all national questions. One of the most striking facts in the history of the period is the preference of the English Catholics for the Protestant succession to the throne and their rejection with vigor and scorn of the plan to make England Catholic by a Spanish conquest which should put a Spanish ruler on the throne. Again and again they insisted that they were Englishmen first and Catholics second. It is surely not without significance that at this time France and Germany were aligned on different sides in great wars, whose ostensible cause was religion. The Huguenot cities in northern France and Protestant Brandenburg certainly felt no national unity with their Catholic neighbors.

BEING FREED EARLY FROM RACIAL AND RELIGIOUS QUARRELS, THE ENGLISH COULD DEVOTE CENTURIES TO WORKING OUT A CONSTITUTION

The vital importance of the acquisition by England of territorial unity, racial unity, a consciousness of nationality, and something approaching religious toleration are most evident when we come to study the growth of governmental and administrative unity and efficiency.

The same great geographical factors which had in early centuries erased the consciousness of a difference in blood wrought powerfully for the creation in England of a common political experience. England was small in total area, and by the practical exclusion of Wales and Scotland from the administrative area until the time of the Tudors and Stuarts the Englishmen, whose descendants were to work such apparent miracles, were perforce huddled together in southern and eastern England, where propinquity compelled them to become acquainted with each other. As they and their descendants lived on a small, narrow island, pretty thoroughly isolated from the rest of the world, they had, perforce, political experiences in common. Furthermore, the Norman conquest had put into the saddle of power the strongest feudal monarch in Europe, a man strong enough usually to override all local nobles, and strong enough to institute systems of taxation and of central administration, to abolish most local customs duties or tolls such as proved the bane of central Europe until the nineteenth century, and to establish something like a uniform system of courts and a law truly common to all parts of his kingdom.

The close propinquity and the strong government which the smallness of administrative England made possible were the factors which students are more and more coming to agree molded the English constitution. But they are particularly well agreed that the success of the English constitution is to be chiefly ascribed to the political experience of the English people, which has taught them that successful government must be the product of mutual concession and compromise. The English constitution works well because Englishmen began many centuries ago to live together in a way which the men of other countries have only approached in recent generations.

CIVIL WAR UNKNOWN IN ENGLAND FOR MANY CENTURIES

We shall likewise see in the early attainment of racial unity, in the early disappearance of the religious cleft, and in the early attainment of a truly national feeling the explanation of the fact that the settlement of domestic disputes by force of arms ceased in the seventeenth century.

The statement that Ulster would resist with arms an act of Parliament produced a great sensation, because no part of the British Isles had threatened civil war for centuries. To Englishmen it seemed a crushing calamity; yet practically every nation in Europe contains larger bodies of so-called citizens who await merely a favorable opportunity to prosecute a civil war. In a strict sense of the word, England has had no irreconcilables. Whatever extensions of legal privileges Irishmen, Scotsmen, and Welshmen have sought for in the last three centuries, there has certainly been in none of those countries any wide-spread sentiment in favor of overthrowing the English crown or the English constitution.

Such a record no other State in Europe can show, and today England is probably the only one of the Great Powers which contains no considerable body of men desirous of changing, fundamentally, the form of government.

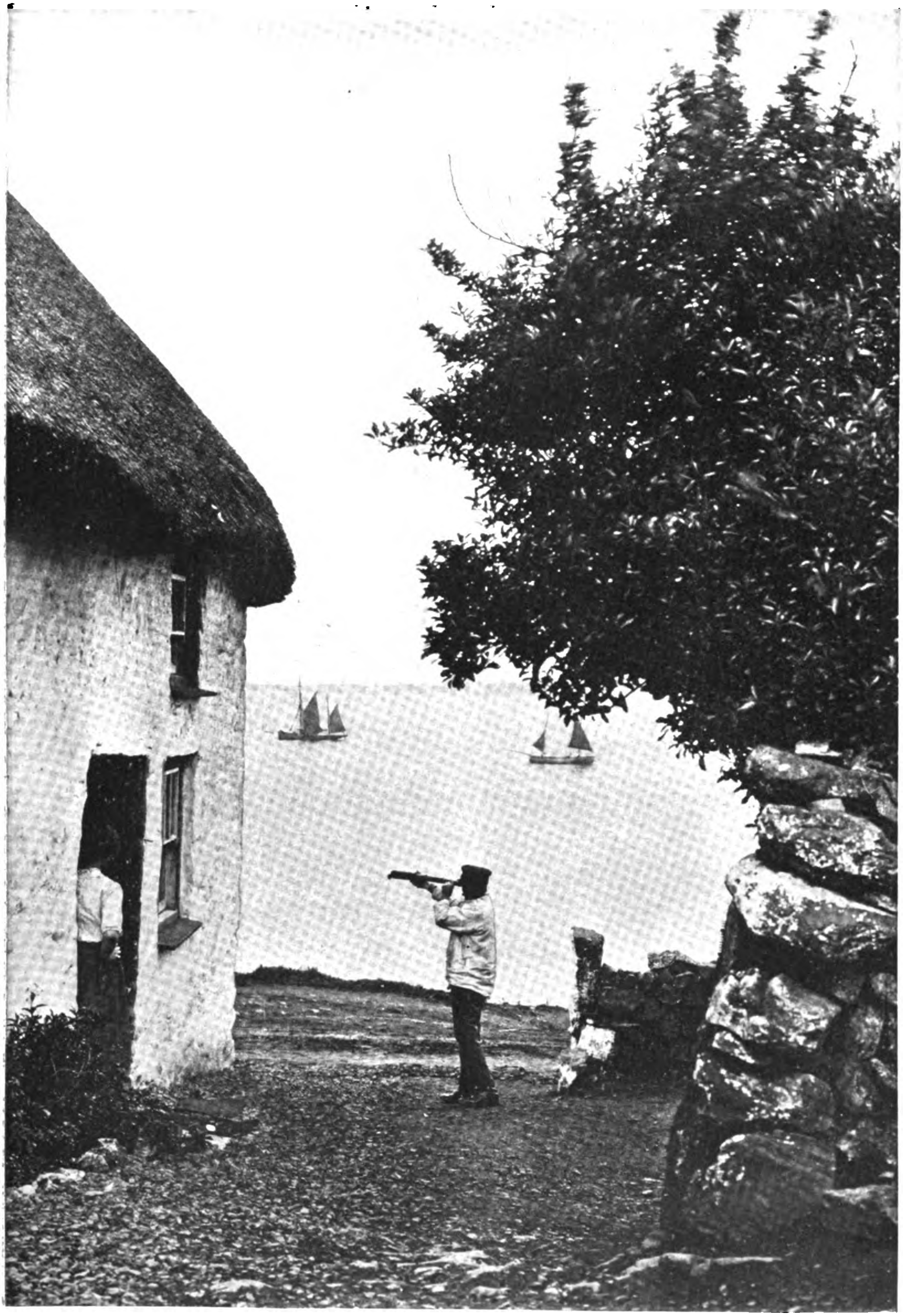
It has been England's peculiar fortune that such differences of opinion as there have been in regard to local government or autonomy should have been held by people who inhabited portions of the British Isles of practically no military, naval, or administrative importance. Compared with Germany, who has the Alsatians and Poles located upon the military keys to the frontier, or Austria, whose southwestern and northeastern frontiers are both in the hands of men who hate the Dual Monarchy with a truly consuming hatred, the English have never had to cope with the problem of domestic discord.

ENGLAND'S PREDOMINANCE

With these facts in mind, let us now analyze what is known as Great Britain's predominance in Europe—this position, if it is a position, which is supposed to give England the casting vote in European politics—and see, if we can, what are the really significant factors supporting it. We shall find that we are dealing with a singularly elusive type of influence, seldom tangible and seldom manifesting itself in precisely the same way.

It is due, least of all, to superior physical strength. Never has it been possible for England to place upon the continent armies capable of waging a decisive campaign without assistance. At times, during the Hundred Years' War, the English armies, single-handed, won glorious victories, like Agincourt, but invariably were unable to turn them to account in deciding the campaign. Since the sixteenth century the English have at times sent expeditionary forces to the continent which have had in some cases decisive influence upon the results of the campaign, but they have never been able, and are not now able, to take the offensive alone against any of the Great European Powers in the field with any chance of success. England's predominance in Europe, then, is not based upon superior military strength; it is not a question of force; her diplomats know invariably that they cannot threaten coercion of their opponents on land.

Yet for three centuries and more the English have succeeded in getting what they wanted, and in the general European



A COTTAGE BY THE SEA: NEWLYN, CORNWALL **Photo by A. W. Cutler**

"The strategical position of England, which is of consequence in economic history, is less the configuration of England itself than the configuration of continental Europe. . . . It is truly an extraordinary fact that the English should have been able to menace the *domestic* commerce of other nations" (see text, pages 408 and 409).

wars have managed somehow to secure the victory for their side.

Let us not minimize the importance of this success, nor assume that it is any the less success because England has succeeded in winning her victories by means of the hands of others. Let us not claim that the English have selected the winning side with uncanny perspicacity and have prevailed because they have always had the good sense to attach themselves to the victor. There are conspicuous instances where the English have consciously espoused the losing side at the time when it seemed as if defeat were an absolute certainty.

Witness the case of Frederick the Great, fighting nearly the whole of Europe with only England as his ally.

Witness the determination with which England declined to make terms with Napoleon when he seemed beyond a doubt master of Europe.

Yet despite the espousal of the losing side and the inability to throw into the European scale an army large enough to decide the issue alone, the English have brought victory to their banners. This, in reality, is what we mean by English predominance, by English preëminence, if you will: they have almost invariably molded European affairs as they wished.

GEOGRAPHY FAVORED ENGLAND

We must not lose sight of the fact that the strategical geography of Europe has given the English advantages of position which were more important in the past than great armies; that the English Channel was, in the days of sailing ships, a more effective barrier against invasion than any army could have been. The strategical importance of Belgium and Holland, too, vital to England, was very fortunately also vital to Germany and France. The English have never, single-handed, been able to keep either France or Germany out of those countries in time of war; but they have, somehow or other, always managed to play off France against Germany, or Germany against France, and in the long run keep them both out of Belgium and Holland. England has protected herself by arousing the fears of others, and it must be admitted that Germany in Belgium threatens Paris a good deal more effectively than she does London, and that Louis XIV in Holland was even more distasteful to the German States on the Rhine than he was to the English.

While we have not, in an article of this length, sufficient space to deal with the strategical geography of Europe in detail, we must emphasize the extent to which the geography of Europe creates similar antipathies and arouses similar apprehensions between most of the nations occupying that continent. By means of these antipathies and fears, England has broken up alliances and coalitions against her and has formed alliances to assist her. We need not praise the British for molding the face of Europe to suit their convenience, but it may not be amiss to insist that the strategical posts which have been of such consequence to the English in the past are in nearly every instance of exactly the same consequence today that they have always been. If we have here the secret of English success, the prime condition of English predominance, it is idle to suppose that it will not be of consequence in the immediate future.

It is again true that the English have taken advantage of the difficulties of others and have won their position by means of others' hands rather than by any positive advantages of their own.

THE EUROPEAN POWERS FOR CENTURIES LACKED THE UNITY OF SPIRIT WHICH GREAT BRITAIN HAD ATTAINED

Until quite recently the Great Powers of Europe distinctly lacked territorial unity, racial cohesion, and national consciousness. We speak of French and German history with assurance; we even write of the French and German nations during the Middle Ages, meaning simply the history of those elements which have since amalgamated into the nations with which we are familiar; but we do not always remember that the phrase "nation" is, in the strict sense of the word, a misnomer and even an anachronism when applied to the States of continental Europe in the Middle Ages.

It was precisely the lack of national

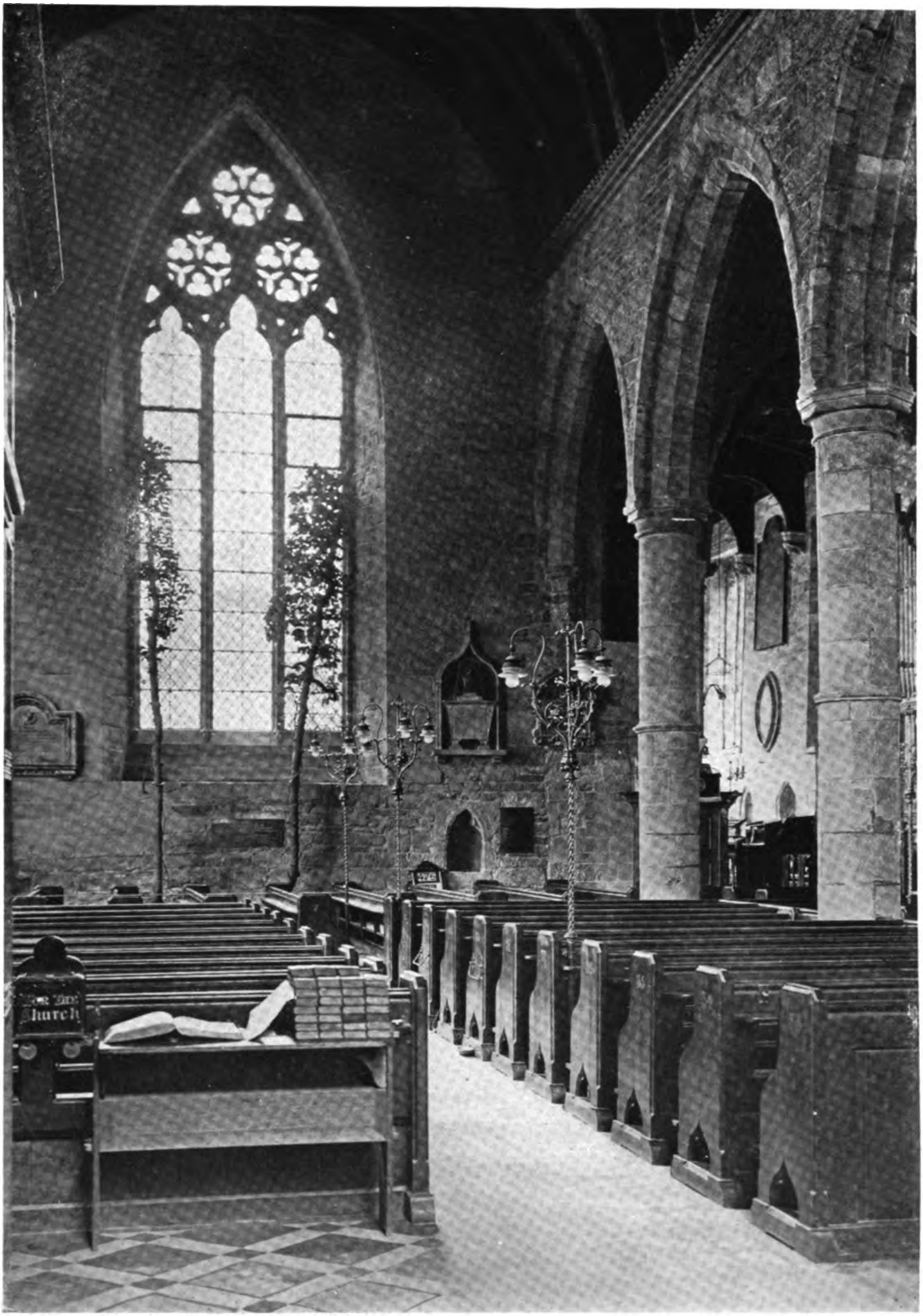


Photo by A. W. Cutler

A CURIOUS SIGHT AT A PARISH CHURCH—TWO TREES GROWING SIDE BY SIDE: ROSS, HEREFORDSHIRE, ENGLAND

"Being freed early from racial and religious quarrels, the English could devote centuries to working out a constitution" (see text, page 399)

A HAPPY SCENE AT ELMLEY CASTLE, WORCESTERSHIRE, ENGLAND

Photo by A. W. Cutler

"No huge armies such as literally ate up Germany during the Thirty Years' War, year after year, have ever been known on English soil. English wealth in the sixteenth century, therefore, was the result of the normal increase of resources in a comparatively poor country freed from serious artificial setbacks. In the long run she became proportionately richer than larger countries with much more extensive natural resources, which were decimated by war. Neither extraordinary diligence nor skill needs to be brought forward as the explanation of the beginning of England's capital fund; nor must we allege robbery to explain it. It was that most unusual but simplest of all things—*saving*" (see text, page 408).

consciousness and national feeling which made the Hundred Years' War possible, which gave the English the assistance for nearly a century of one-half of France.

The lack of racial cohesion and anything approaching national sympathy and consciousness in Germany allowed the French and the Swedes to ravage that unhappy land for more than a decade in the seventeenth century, after all the German disputes had been settled. A German nation, in the modern sense of the word, existent in 1630 would have made at least the later phases of the Thirty Years' War an impossibility. The continued absence of these qualities in the eighteenth century were exactly the conditions prerequisite to the aggressions of Louis XIV and of Napoleon. The work of Stein and Scharnhorst in arousing and forming national consciousness along racial lines had immediate results of consequence. The spirit which they created was the real power behind Blücher at Waterloo.

UNITY OF ACTION AND A CONSISTENT POLICY FOR CENTURIES

The real secret, then, of English predominance has been her territorial unity, her racial unity, her national consciousness, her political experience—all of them realities in the sixteenth century to an extent and a degree which it is doubtful that they attained in any other European State for more than two centuries later. England stepped into the European arena as a unit, of whose unity her own rulers and those of other countries were conscious. Whatever force she possessed her rulers knew that they could direct as they deemed necessary. Unity of action, a consistent policy followed out carefully by generations of statesmen, became possible, and its importance is difficult to overestimate. Somehow or other the English have left upon the tangled web of European diplomacy the impress of consistency, singleness of purpose, and (if there be such a quality in diplomacy) of honesty. The Englishman's word has been his bond, not only in commercial transactions between individuals, but in the courts of nations. Time has proved the faithfulness of England to her allies. Her promise of aid and support has always meant a promise impervious to the promises, threats, or cajoleries of her enemies. It is this consistency, this firmness of purpose, this consciousness of England's essential honesty, of her honorable observance of her promises, that has made her the arbiter of Europe and has given her voice such weight in the deliberations of nations.

"ENGLAND OVER ALL" HAS BEEN THE MOTTO FOR CENTURIES

Her early attainment of territorial and racial unity made it impossible for others to use successfully against her the sort of weapons that she employed with such telling effect against them. In the sixteenth century Elizabeth and her statesmen faced perhaps the worst crisis in English history. It seemed as if all Europe were about to unite against her; if not on one pretext, then on another. There seemed to be two or three possible combinations, any of which would be powerful enough to conquer her; and it was indeed highly doubtful whether England could withstand, single-handed, the assault of Spain alone.

Elizabeth fought the battle in Europe, not at home. The Dutch revolt, which she sedulously nursed and aided, struck Spain a deadly, crippling blow. In France the strength of the Huguenots gave Elizabeth powerful assistance and diverted the energies of the French crown at critical moments.

What made these foreign victories decisive for the safety of England was the inability of her enemies to use the same weapons against her. The Spanish and the French tried to stimulate revolts in Ireland and invasions from Scotland; in England they subsidized the Catholic party and fomented rebellion. All went well in all these parties until it became clear that they were to choose between the disabilities and difficulties they already chafed under and relief bought at the price of a foreign invasion and possibly of a foreign sovereign. The Scotch nobles preferred an English alliance to a French or Spanish alliance, which promised much more glittering rewards. The English Catholics, when the sailing of the Armada made the real issue clear, loyally supported the Crown, and afterwards flatly told the Spanish agents that no revolt brought about with Spanish assistance would have their support. Similarly the fatal error of James II was his reliance upon French assistance. Neither he nor his children were ever able to arouse any considerable enthusiasm for a party whose success meant French influence and perhaps French domination in English politics.

Foreign domination had been, in fact, for centuries the worst possibility that Englishmen could conceive. Let us not forget that the worst crime set down to the discredit of the most unpopular king in English annals was his surrender of his kingdom to a foreigner, even though that foreigner was the Pope, the Vicar of God.

THE ENGLISH ALWAYS UNITED AGAINST THE FOREIGNER

Do we not, in fact, get a strong light upon English feeling from the usage of words by Henry VIII at the time of the Reformation? He and his statesmen were seeking some phrases sure to render the Pope and Catholics unpopular with the men in the street. The words, which recur again and again throughout sixteenth-century statutes, are the words "foreigner" and "foreign." When William III prepared to seize the throne in 1689, he saw clearly that he must win without fighting and conquer James II without an army. A civil war would be disastrous; the use of Dutch troops, except for a few men in his own bodyguard, would defeat the expedition before it started.

It is this sentiment of nationality—strong enough to prevail in the minds of even the most ignorant people over passion, religion, cupidity, ambition—which has throughout English history dissolved the malcontent party at the crucial moment, when their treason appeared to them in its true light, and has thus robbed the invader of the assistance on which so much depended.

The geographical position of England as an island, the strategical geography of Europe which created antipathies between other nations, the domestic struggles of other nations toward nationality, have all been, without doubt, the tools which England has used in securing her present position; but the real motive power has been the spiritual quality of the nation itself, its cohesion and unassailable unity, which rest in last analysis upon geographical forces and upon the accident of history. Indeed, had England not attained this cohesion and unity so early that by the time she entered the European arena they were the premises of English thought and action, even these factors would not have been sufficient to insure her influence or safety.

ENGLAND'S ECONOMIC STRENGTH

England's economic strength has been due to those same peculiar and exceptional factors to which she owes the advanced state of her national consciousness. She has had a certain advantage—an artificial handicap, if you will—in the economic race with other nations. The small area of arable land in the plain sloping from the Welsh Mountains to the Channel and the North Sea was nearly all available for agriculture, though not all of it exceedingly fertile. A mild, equable temperature, without great extremes of heat or cold, an abundant but not excessive rainfall, produced conditions peculiarly favorable for the crude agriculture of the Middle Ages. The mild winters made it possible to leave cattle in the open fields the year round and ordinarily kept enough grass green to provide them with food 12 months in the year. Poor as was the quality of this grass, scraggy as the cattle were, inefficient as the agriculture was, the returns seem to have been somewhat greater than those in countries like Germany, where the winter was more severe.

This small, well-knit country possessed also the artificial advantage of isolation from Europe. Its small size and its formation resulted in a political unity which has not been disturbed or seriously questioned since the eleventh century. There was no geographical basis for two or more States of nearly equal strength, from whose rivalries serious or long wars might result.

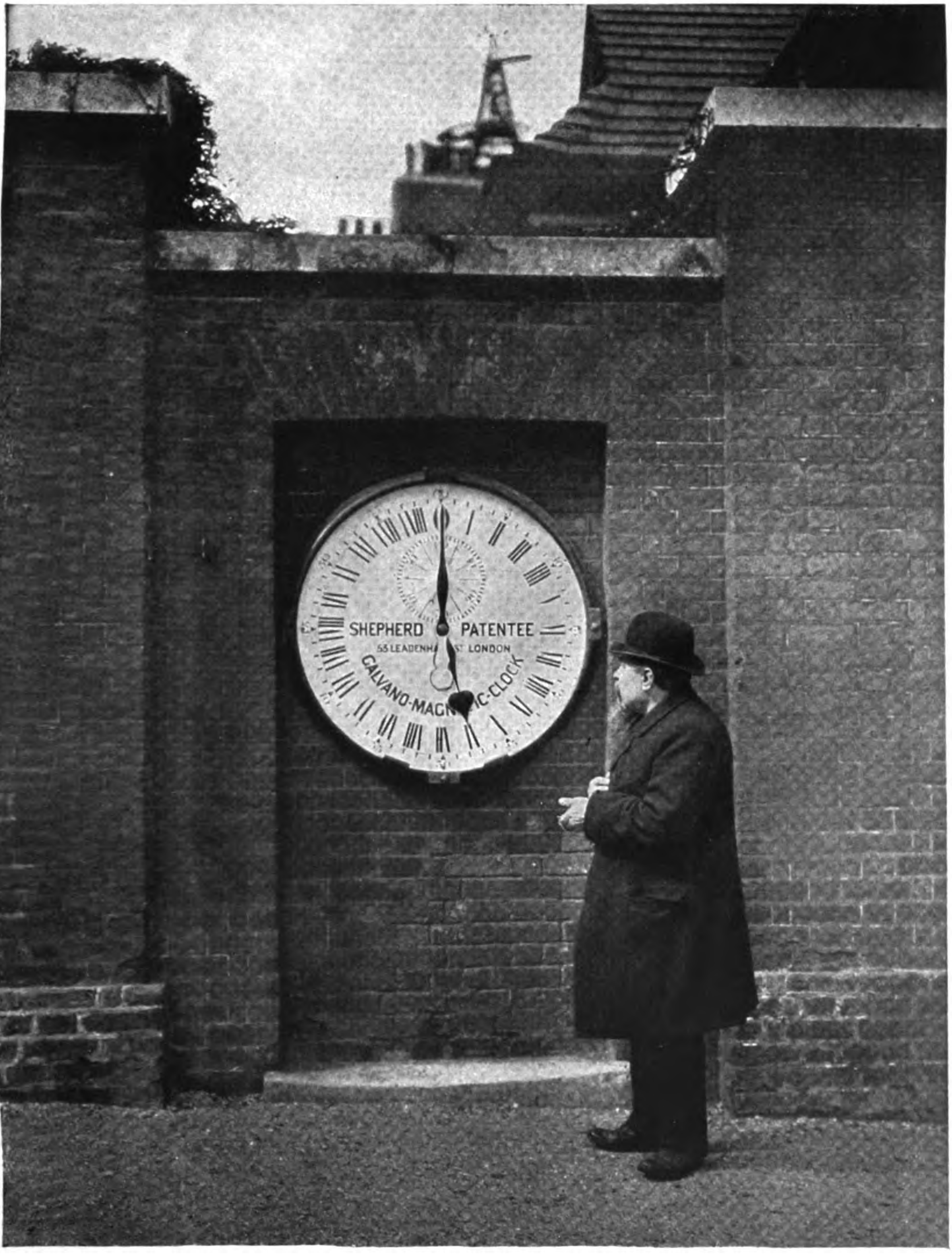


Photo by A. W. Cutler

THE GREAT CLOCK AT GREENWICH OBSERVATORY, LONDON

Here the maps of the world begin, for Greenwich is the international prime meridian. Every place on every map throughout the world is now indicated as east or west of this observatory. "The long development of the spiritual life of the nation, made possible by the early attainment of territorial and racial unity, has perhaps something to do with the blossoming forth of inventive genius to a greater extent, if we consider the whole of English history, than in any other country. It is perhaps enough in this place to adduce the example of the industrial Revolution of the eighteenth century, upon whose stupendous achievements the development of science, industry, and agriculture in the nineteenth century entirely depended" (see text, page 411).

FOR EIGHT CENTURIES HER SAVINGS HAVE BEEN ABLE TO ACCUMULATE BECAUSE NO INVADING ARMIES HAVE DESOLATED HER LAND

The existence of the Channel and the difficulty of invasion prevented interference from Europe. In fact, England has never known, since William the Norman harried Yorkshire, such ravaging by armies and consequent economic loss as continued in Europe for centuries. There were, to be sure, wars between kings and barons, between bodies of nobles during the Wars of the Roses, between national parties during the civil wars of the seventeenth century, but investigation shows us that these were, comparatively speaking, carefully and politely conducted, and whatever plundering or burning there was seems to have been usually confined to the personal estates of the men concerned.

No huge armies such as literally ate up Germany during the Thirty Years' War, year after year, have ever been known on English soil.

English wealth in the sixteenth century, therefore, was the result of the normal increase of resources in a comparatively poor country freed from serious artificial setbacks. In the long run she became proportionately richer than larger countries with much more extensive natural resources, which were decimated by war. Neither extraordinary diligence nor skill needs to be brought forward as the explanation of the beginning of England's capital fund; nor must we allege robbery to explain it. It was that most unusual but simplest of all things—*saving*.

Already, in the time of Alfred, men began to realize that the protection of England would depend upon the possession of a fleet sufficiently large and efficient to ward off invasion from the Continent. Experience had proved again and again in the preceding centuries that the geographical formation of England afforded the defender very little opportunity after the invader had once secured a foothold. The invasions which had landed in England had invariably succeeded, and it became at that early day clear that invasions must be defeated before they landed. The causes of the creation of an English fleet were therefore purely defensive; but that fleet, once it had become capable of defending the Channel, proved available for other uses, which, as years went by, it was gradually realized were of greater and greater consequence.

As always, the great truths regarding a nation's position are realized slowly and are borne in upon that nation by the long experience of living rather than by logic or by ambition. It was seen, in short, that the English fleet controlled the Channel, and in controlling the Channel controlled European trade.

HER GEOGRAPHICAL POSITION WAS SUCH THAT SHE COULD MENACE THE DOMESTIC COMMERCE OF OTHER NATIONS

The strategical position of England, which is of consequence in economic history, is less the configuration of England itself than the configuration of continental Europe. It so happened that the great plain upon which France and Germany are located sloped to the Channel and to the North Sea, and the rivers draining that plain necessarily poured their waters into the particularly small part of the vast area of the world's oceans which the English fleet controlled.

We must not forget that, until the days of the railroad, trade depended almost entirely upon water communication. The carriage of goods overland on the backs of horses, for there were few roads in the Middle Ages capable of sustaining a loaded cart, was a difficult and costly procedure and could be profitably employed only in the case of luxuries where the bulk was small and the value great.

As Europe did not produce such goods in any quantity, domestic trade consisted in the shipping of more or less bulky articles up and down the rivers. Those around which trade centered were the Seine, the Rhine, and the Elbe, and Germany's domestic trade between Hamburg and Cologne was compelled to pass through the North Sea and the English Channel, just as the trade of France from Paris to Bordeaux had to pass through the Channel and the Bay of Biscay.

Photo by A. W. Cutler

CARAVANS RETURNING TO SURREY FROM KENT (ENGLAND) AT THE CLOSE OF THE HOP-PICKING SEASON

It is truly an extraordinary fact that the English should have been able to menace the *domestic* commerce of other nations.

Normally the important trade centers of northern Europe were grouped around these rivers, and Belgium and Holland, because of their position at the mouth of the Rhine, which drained the richest and best developed section of central Europe, were the marts of European exchange until the discoveries of the fifteenth and sixteenth centuries made the oceanic trade of more and more consequence.

GEOGRAPHY GAVE HER MANY PECULIAR ADVANTAGES

Accident has placed the good natural harbors on the European coast far apart: Hamburg and Emden; the group of harbors in Belgium and Holland; and then along the coast of France no really good harbor, from the famous port of Calais till the Channel is passed, and around the promontory appears the port of Brest. At Nantes, at La Rochelle, at Bordeaux, are great harbors, but the good harbors—and this fact is still as important as it ever was—which are connected naturally by water or by road with the great commercial centers of northern Europe, are all north of the Channel.

Another extraordinary fact, or accident if you will, made the Channel the only safe and convenient approach to these harbors. The mountains of the British Isles are on the western side, toward the Atlantic, and the more important mountains under the sea, whose peaks appear in a succession of islands along the Scotch and Irish coasts, the strong currents beating on this rocky shore, and the frequent storms, made the navigation of this part of the Atlantic so dangerous for sailing ships that it was not ordinarily attempted. Indeed, the voyage around those islands is still so dangerous that modern steamships avoid it whenever possible, and the English themselves, who know these waters well, have recently lost a great ocean liner in the attempt to go around the Isles.

The only practicable approach for oceanic trade to the good harbors of northern Europe lay through the Channel, where geography furnished the English with peculiar advantages. That small body of water is agitated by cross-currents of all sorts and varieties, is swept by cross-winds, and always offers difficulties to sailing ships. For many centuries the average sailing ship did not attempt to ride out a storm at sea, but tried to keep near enough some harbor to be able to put in if necessary. This was, in fact, an established principle of navigation, and the English themselves were the first to change it.

The only harbors along the Channel which ships could usually make in moments of peril were on the English coast, and the shipping of northern Europe on its way up and down the Channel hugged the English shore and ran into English harbors whenever necessary. These facts, together with the strength of the English fleet and the ability of the English sailors, promptly put her in a position to control the world's commerce.

One of the most interesting illustrations of the power of the Channel appeared in the sixteenth century, when a Spanish treasure-ship laden with money to pay the Duke of Alva's soldiers, who were on the verge of mutiny for the lack of it, with money, too, which Philip II had borrowed with great difficulty and at extortionate interest, was compelled to put into an English port by a storm. The Channel actually placed in Elizabeth's hands an advantage over her foe which she could have obtained in no other way, actually forced her foe to come in of his own free will, so to speak, and put himself at her mercy. She carried the gold to London for "safe-keeping."

These natural factors, which made the naval control of the Channel a simple matter for England, also made England the normal and ideal exchange center for the domestic and international trade of northern Europe. It all had to pass England's door. Besides, the inferior size of England, her lack of military strength, her isolation, made the northern people prefer a trade center at London, because it was safe from interference by the European nations themselves.

PRACTICALLY EVERY FEATURE OF MARITIME ARCHITECTURE ORIGINATED BY THE BRITISH RACE

The rise of England as a maritime and colonial power is too well known to make it essential here to do more than point out the fact that the character of international trade made its monopoly comparatively simple in the days of sailing ships and slow communication. Until the steamships appeared, ocean freights remained too expensive and uncertain for the shipment of the types of bulky materials—grain, coal, iron, and the like—which now form so large a part of the world's commerce. International trade was for centuries a trade in luxuries which were not producible in Europe at all, and were, in fact, almost exclusively natural products of the East or West Indies. Muslins, silks, and spices were the staples during the Middle Ages, and to this list the discoveries of the sixteenth and seventeenth centuries added sugar, tobacco, tea, coffee, and the like. Such a trade could be monopolized simply enough by controlling the sources of supply, which were, of course, relatively few.

When the English saw that the defeat of the Armada had made them supreme upon the sea, they realized that the monopoly of the international carrying trade was a possibility and might conceivably make England the wealthiest country in Europe. The fleet therefore became to them something more than a defensive weapon. Upon its supremacy would hang this monopoly, and they, accordingly, promptly picked quarrels with the Dutch, who were then their greatest

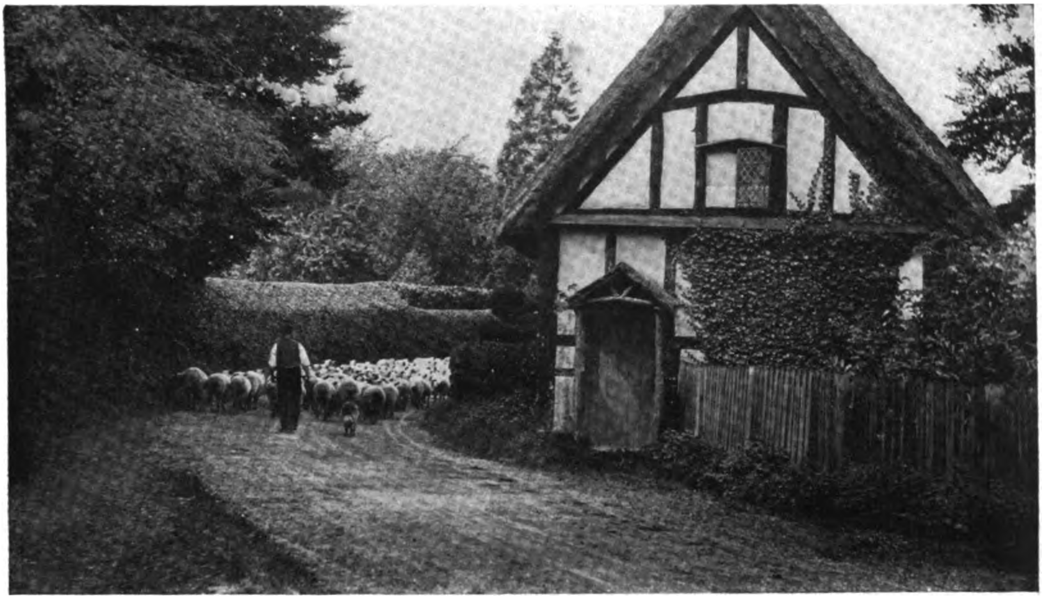


Photo by A. W. Cutler

A BEND IN THE ROAD AT THE VILLAGE OF WICK, WORCESTERSHIRE, ENGLAND

These old half-timbered houses, dating back to Queen Elizabeth's reign, are a feature of this country

rivals, and in the course of time almost destroyed the Dutch carrying trade.

While no doubt the structure of the Channel was a factor of consequence, while the control of the Baltic and of the naval stores, whence alone wooden fleets could be built and repaired, were of the greatest importance in creating and in maintaining the English supremacy, we must never forget that the true basis of English naval power lay in the natural ability and genius of Englishmen as sailors. This, in fact, is the vital thing and this, no doubt, the English owe to the location of their country, to its isolation, and to the stormy character of the waters around it. Practice makes perfect. With hardly any exception the world owes every feature of modern maritime architecture, seamanship, and naval strategy to the British race.

We see here the factors producing and developing two of the great sources of English wealth—her profits as broker and exchanger for the trade of northern Europe, her profits as international carrier. It has been said that an international transaction of magnitude cannot be completed without somehow giving some Englishman a share of the profits. Into this business of exchanging and transporting England put, long ago, the capital which the long, quiet, steady increase of the earlier centuries had provided.

THE WONDERFUL ACHIEVEMENTS OF BRITISH INVENTION

We shall entirely fail to realize how sound England's economic development is, how largely the result of her own effort, unless we lay due stress upon the achievements of British genius. The long development of the spiritual life of the nation, made possible by the early attainment of territorial and racial unity, has perhaps something to do with the blossoming forth of inventive genius to a greater extent, if we consider the whole of English history, than in any other country. It is perhaps enough in this place to adduce the example of the Industrial Revolution of the eighteenth century, upon whose stupendous achievements the development of science, industry, and agriculture in the nineteenth century entirely depended.

While many European scientists have with great ability developed the general principles and have in the specific application of science to human life accom-

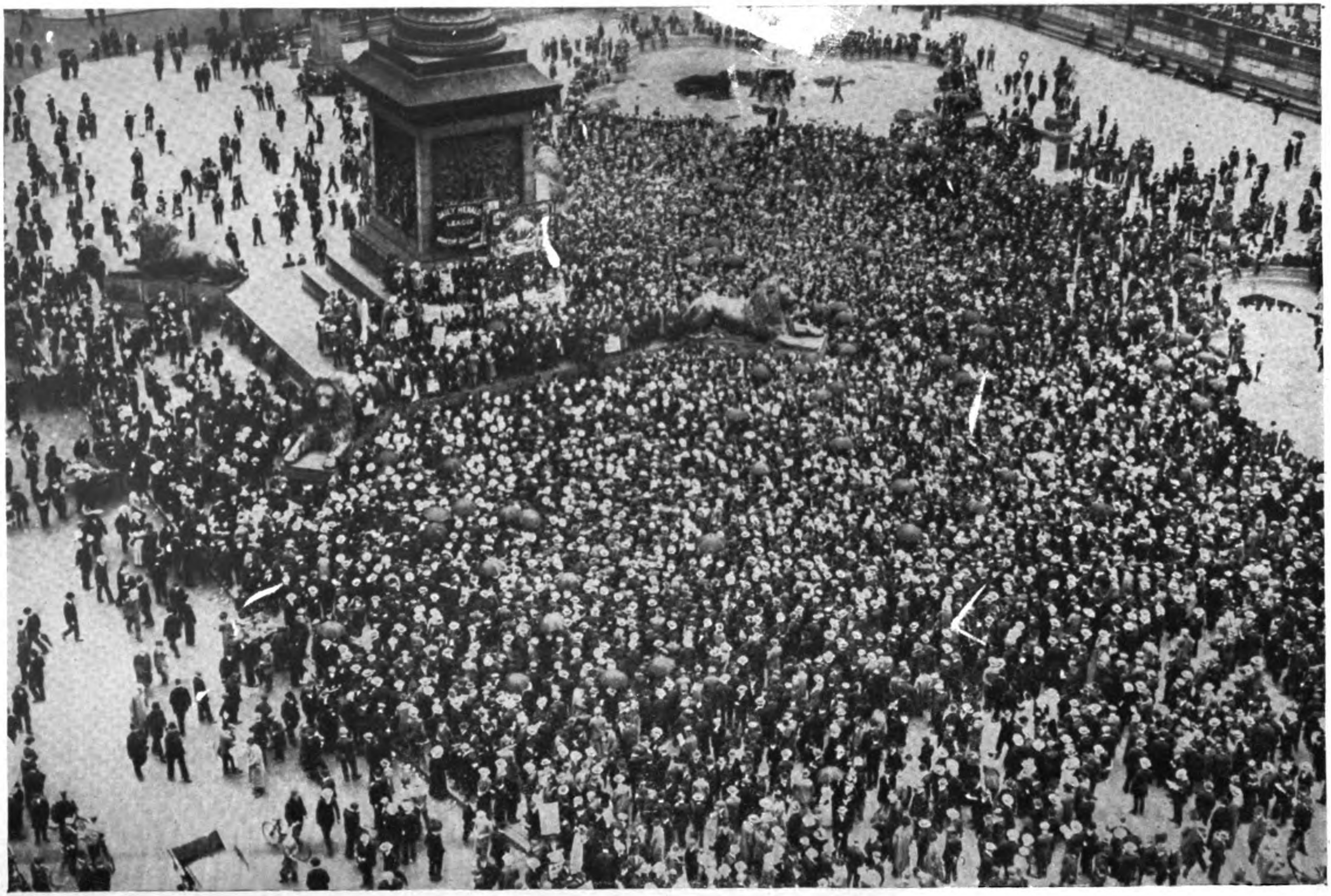


Photo and copyright by International News Service

CROWD IN TRAFALGAR SQUARE, LONDON, JUST AFTER WAR WAS DECLARED

"Multitudes of men, myriads of acres, thousands of cattle, bursting granaries, and humming factories cannot take the place of that spiritual accord which binds together with irresistible strength a great people whose ancestors have fought, suffered, and hoped side by side for so many centuries that coöperation between them is not merely permissive, or possible, or attainable by the intelligent direction of their superiors, but inevitable" (see text, page 414).

plished much that is wonderful, we ought surely to bear carefully in mind at this time, when so much stress is being laid upon the achievements of German scientists, that most of the revolutionary discoveries and inventions have been made by men of the British race. The steam-engine and the locomotive are at the bottom of everything, and without them the development of the last century is unthinkable Scarcely less important were the smelting of iron with coal, the blast furnace, the steam-hammer, the first Bessemer converter, without which modern iron and steel and all the complex machinery they made possible could never have been. The numerous machines for spinning and weaving were first commercially developed and the first factories were organized in England. The principle of assembling under one roof all the processes necessary for turning the raw material into the finished product was revolutionary and extremely potent.

Nor must we forget the great upheaval in agriculture produced by the work of Baker and his contemporaries in the breeding of cattle and the selection of grains, by the introduction of the turnip into the rotation of crops. Quality became possible, and it only remained for American farming machinery to complete the emancipation of the human race from hunger.

It almost seemed in the eighteenth century as if the British had added to their control of the Channel and their monopoly of the carrying trade a monopoly of inventive genius. It may indeed be true, as the Germans claim, that the banner of industrial invention has passed from England's hands; but the vast capital which this industrial monopoly brought to England is none the less in existence. English wealth is due partly to her peaceful past, partly to her strategic position, partly to her fleet and its carrying trade, but chiefly to the extraordinary efficiency of British industry which resulted from the development of these inventions.

THE NAPOLEONIC WARS GAVE ENGLAND A MONOPOLY OF MANUFACTURE

Chance threw opportunity in England's way, as some phrase it; but a little examination will show us that the monopoly of manufacture for the world which the English obtained during the Napoleonic wars was really the result of her isolation, and of the fact that the Channel weather rather than the British fleet foiled all of Napoleon's attempts to interfere with the domestic peace of the Island Kingdom. For nearly twenty-five years, while European industry was at a standstill and European trade nearly annihilated, the English factories ran overtime and the English merchants sold the goods at war prices to their own enemies. This artificial monopoly, plus the unusual profits due to the factory organization and to the new machinery, made the period as a whole one of astounding prosperity for England. The expenses of the war, which that generation paid, consumed only a fraction of the profits the war fairly thrust into English hands.

While such extraordinary circumstances could not continue and while the last century has seen a less spectacular development in England, all careful observers are agreed that modern England is exceptionally alert, capable, industrious, and competent. It is still developing at a rapid rate, as the swelling volume of its exports only too clearly show.

From the profits of past generations England has made great investments in other countries from which she draws at present an enormous revenue, visible, of course, in her surplus of imports over exports. This is, naturally, clear gain for the present generation of Englishmen—a great sum paid them every year because of the genius, thrift, and success of their forebears. Few, if any other, nations in the world are in receipt of so large and tangible an evidence of the economic success of the nation's past. Something has intervened in other countries to use up the capital, and more often than not this has been war.

There is also some racial quality in Englishmen, or perhaps we should say some national quality, the result of so many years of association with each other, which appears constantly as what the English like to call their honesty.

No small part of England's success in

international trade has been the ability of the English manufacturers to maintain a standard that is almost unvarying. The English products which bear the great names have been the same for generations, and the proprietors have never yielded to the temptation to debase the product to increase the profit. They have sought to increase profit by the extension of operations and the increased volume of sales. A cake of Pear's soap, a jar of Cross & Blackwell's pickles, a bottle of Bass's ale, are the commonest examples of this honesty. Its value in international trade has proved itself again and again. Merchants in the far-off quarters of the world know exactly what they are ordering and exactly what it will be like when they receive it, and they are never disappointed.

The Germans have claimed that English goods are not as well adapted as their own to the needs of tropical countries, but it has been often shown that when people buy from a distance they are more likely to buy something they can rely on than some unfamiliar article which they might prefer if they had it. German agents, with the goods on hand for delivery, have successfully sold them, but the large orders of firms that do not deal with agents still go to England.

THE BRAIN AND HEART OF THE NATION

After all is said—and we have listed our strategic factors and our economic influences, our political causes, our administrative forces—we come at last to the conclusion that the factors of greatest potency explaining national power and success are spiritual and not physical. The brain and heart of the nation are all-important, and upon their vitality nations depend far more than they do upon physical size.

Multitudes of men, myriads of acres, thousands of cattle, bursting granaries, and humming factories cannot take the place of that spiritual accord which binds together with irresistible strength a great people whose ancestors have fought, suffered, and hoped side by side for so many centuries that coöperation between them is not merely permissive, or possible, or attainable by the intelligent direction of their superiors, but inevitable.

Until the national consciousness reaches this degree where it is inescapable, where every member of the community is a part of its gristle and bone, not because some one has convinced him that he ought to be, not because intelligent leaders have taught him how to act as if it were so, but simply and solely because it is so, the consciousness is still lacking which moves and directs the inarticulate convictions of the vast majority, who are neither well educated nor highly intelligent, and who are effectively reached only by influences racial and national in their scope and duration.

In the long run, the collective effort of a *nation* is greater and more effective than the effort of an equal number of *individuals,* however carefully directed. In the long run, only those nations act collectively who act involuntarily and need a minimum of direction.

While no one who is a truly candid student will deny that England has still much to attain in political and social consciousness and a long road to travel before the national consciousness will become instinctive upon aught but the simplest subjects, he will still be compelled to admit that England has progressed further in spiritual national consciousness than any other community in the world simply because the early attainment of territorial and racial unity enabled the ancestors of the present Englishmen to begin living together long, long before the final elements of other nations had been assembled.

FOLLOW MY LEAD

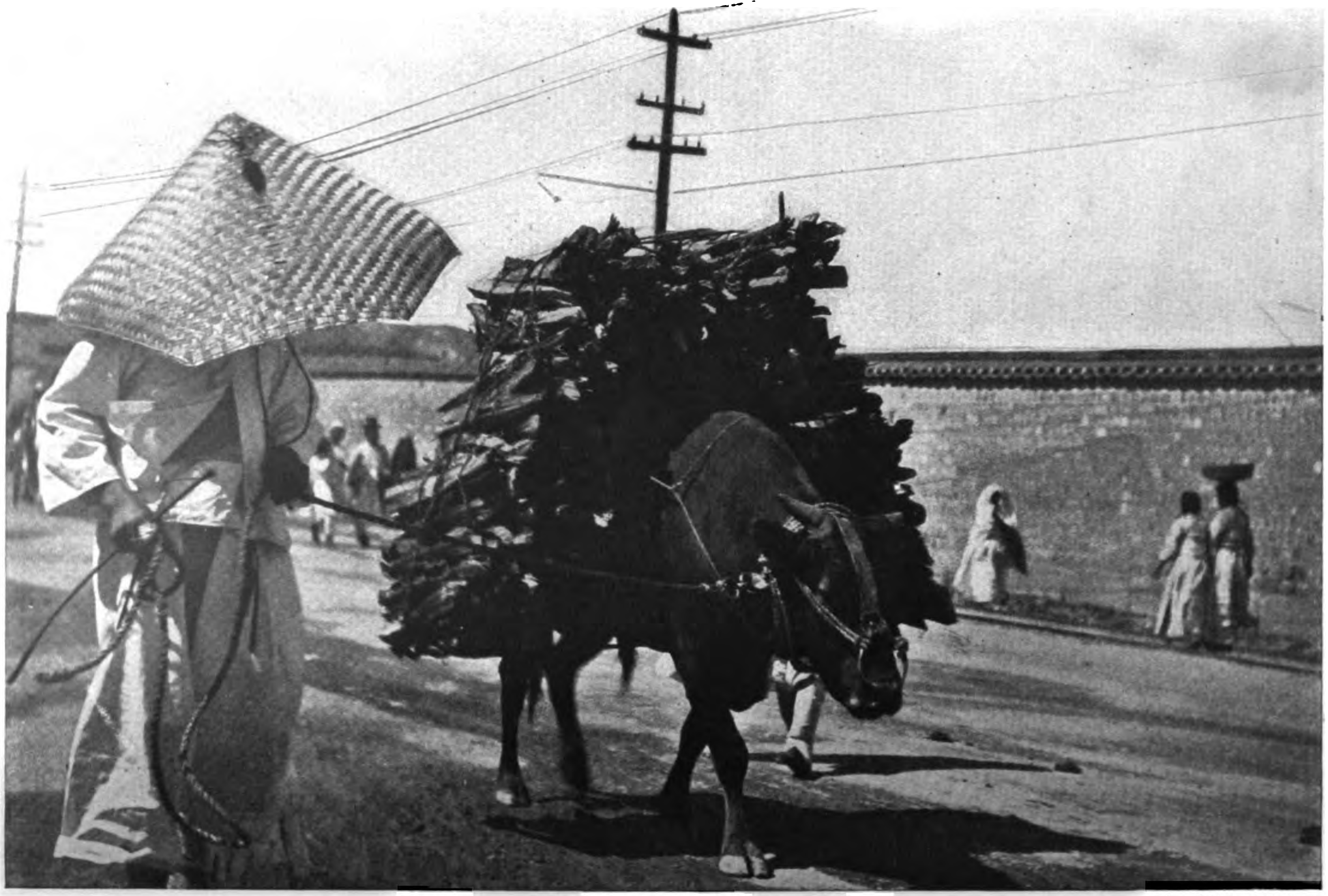


Photo by Roy C. Andrews

A FARMER BRINGING WOOD TO TOWN: KOREA

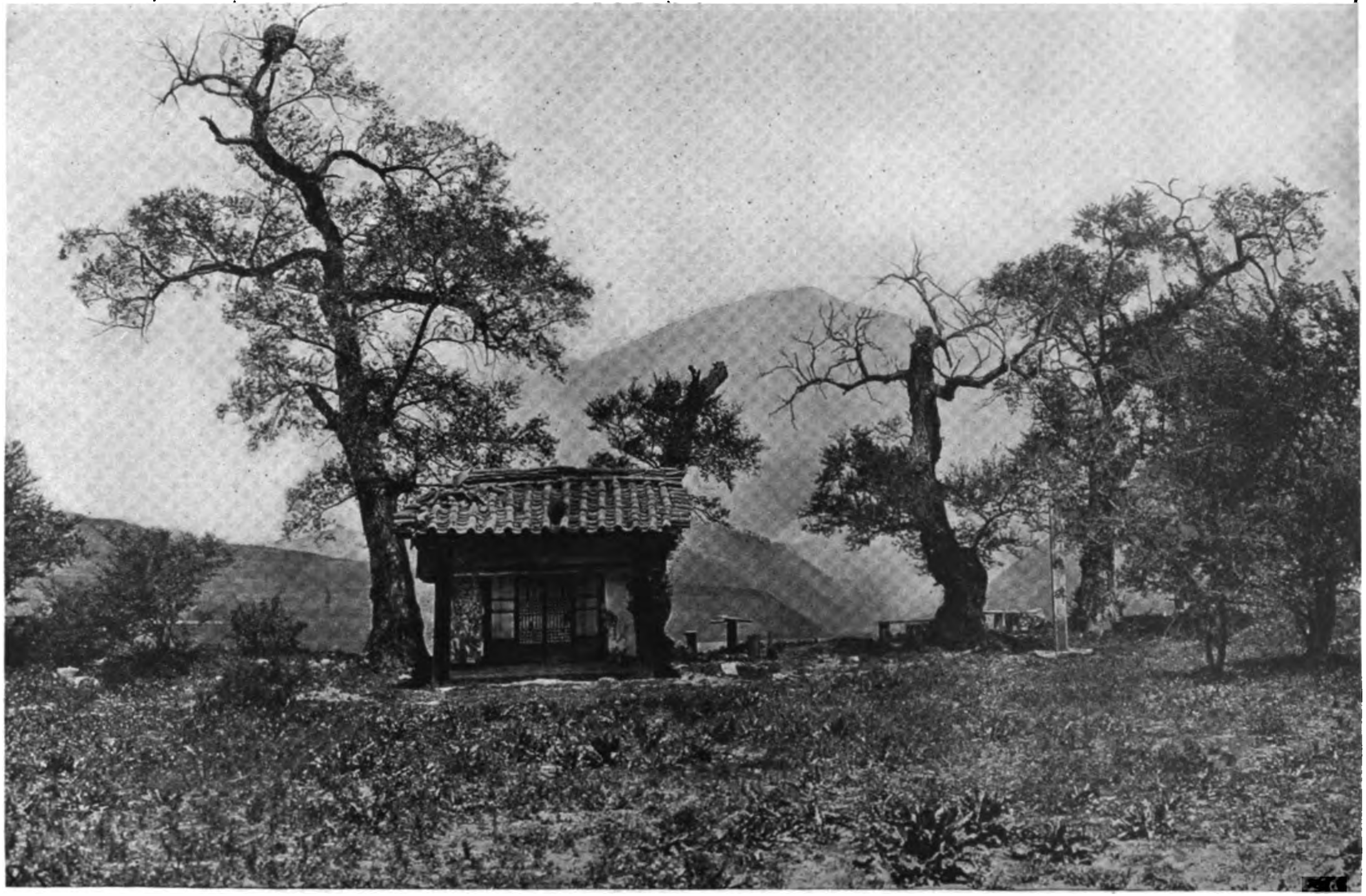


Photo by Roy C. Andrews

A SHRINE AT THE CITY OF HEI-SAN-CHIN: KOREA

UNDER THE UMBRELLA: JAPAN

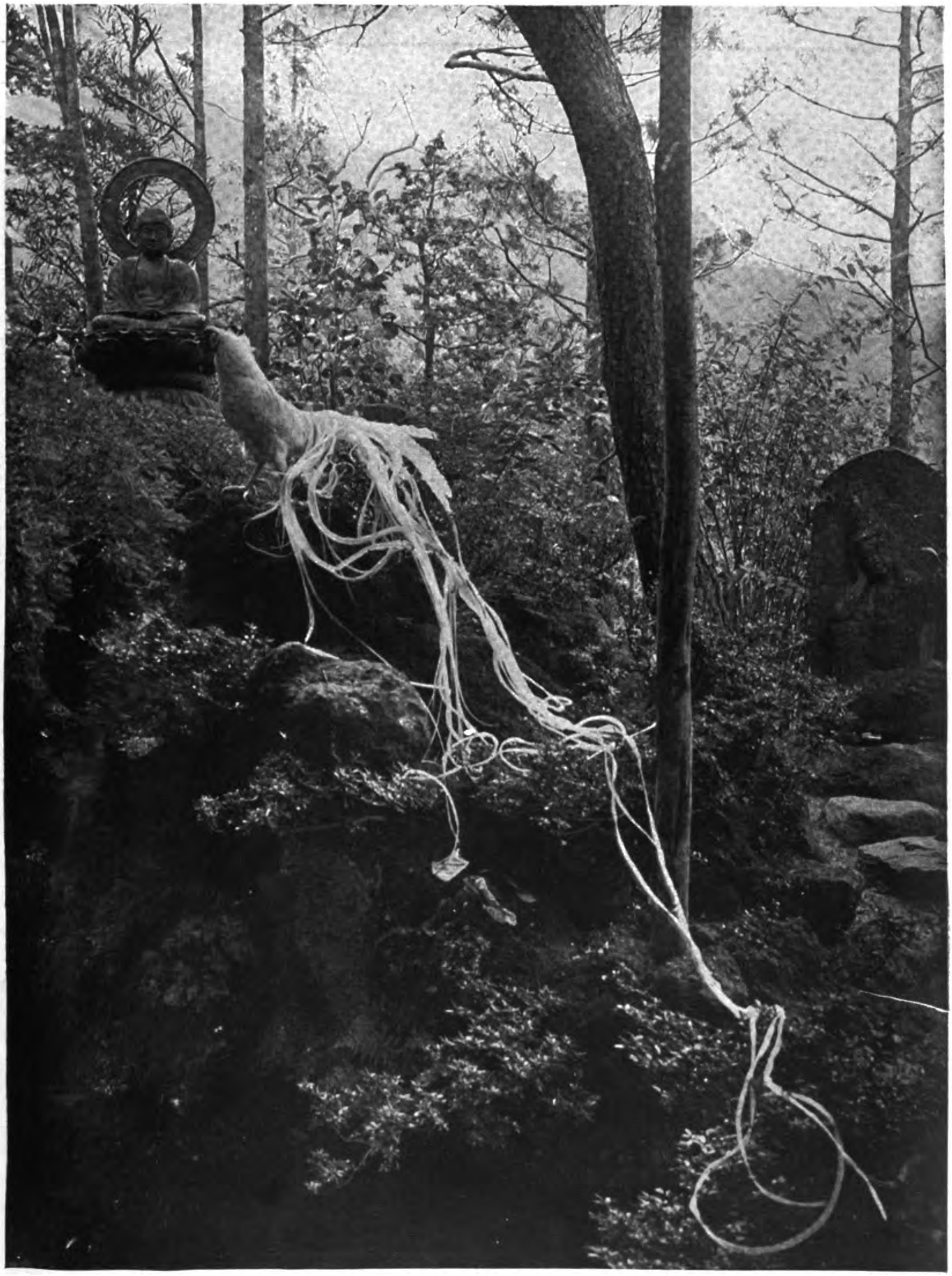


Photo and copyright by Underwood & Underwood

BREEDING ROOSTERS WITH TAIL FEATHERS EIGHTEEN FEET LONG

In Shinewara, on the Island of Shikoku, Japan, the natives undertook to breed roosters with one aim—the lengthening of the tail feathers of the ordinary barnyard cock. By patient selection of a brood of fowls, the hens of which sometimes have tail feathers eight inches long, continued through a hundred years, the rooster which is pictured here has tail feathers which measure eighteen feet in length. The rooster seen in the photograph is the property of a dealer in antiques at the famous mountain resort, Miyanoshita, on the Island of Shikoku.

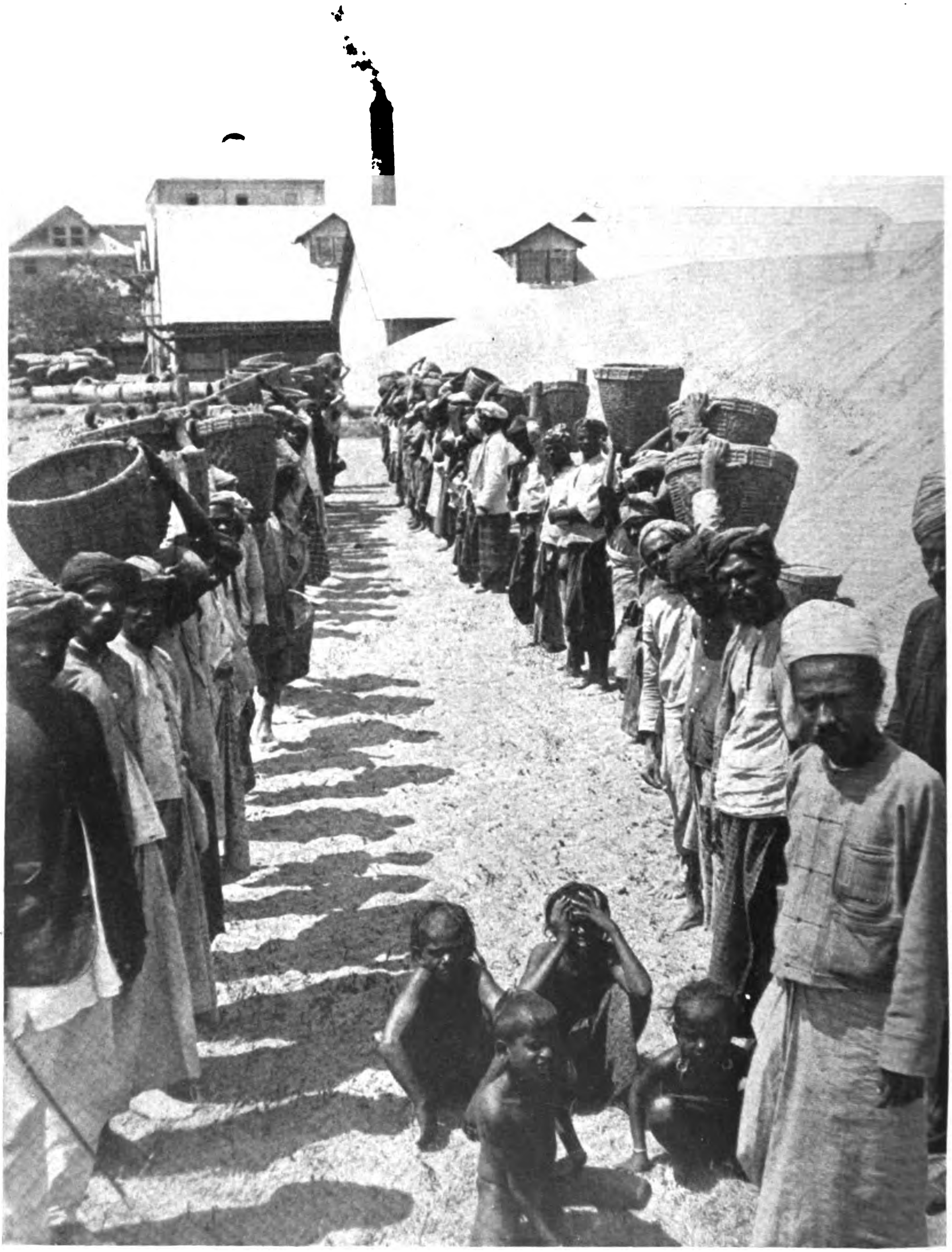


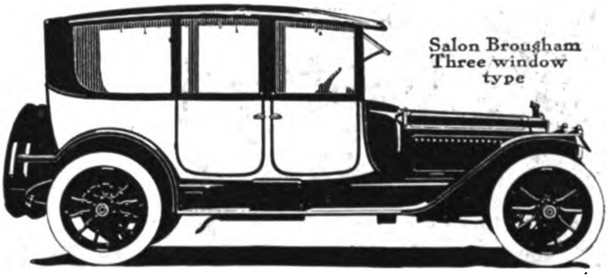
Photo and copyright by Underwood & Underwood

A MOUNTAIN OF RICE: RANGOON, BURMA

Rangoon boasts of the largest rice-handling plants in the world and the photograph shows one of them. Thousands of tons of the tiny grains are piled up in huge hills, much as coal is stored in America. In the principal shipping depots the rice is handled much the same way as wheat is treated in the lake region of the United States. Foreign capital has constructed rice elevators and suction pumps by which the cereal is loaded into the vessel's holds. The agile Burmese handle the rice in other plants, however, and, using their small receptacles, work almost as fast as the machinery. The picture shows a group of freight handlers and the hill of rice they are about to carry away in bushel baskets.

PACKARD

MADE IN AMERICA



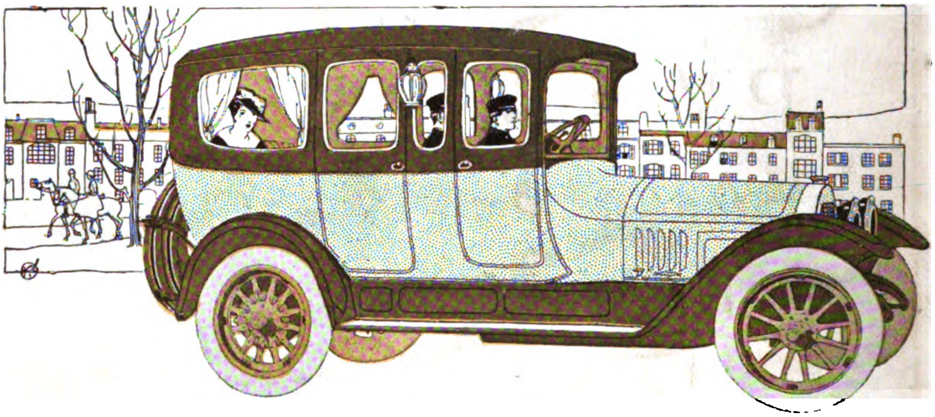
Salon Brougham
Three window
type

Many American buyers of foreign cars have been influenced largely by habit. But invariably their first purchase of a Packard has shown them the superior worth of the American-made car. In large proportion, they have been converted because they have realized in the Packard an expression of their own thought and taste, coupled with the superlative quality in performance on the road.

Ask the man who owns one

PACKARD MOTOR CAR COMPANY
DETROIT

Lincoln Highway Contributor   Licensed Under Kardo Patents



The
UNCOMMON CAR

Any motor car is a source of pleasure. A few motor cars are a source of pride.

A possession is doubly prized when it is *uncommon*, as well as excellent. The Uncommon Car is more than an excellent car. It is rare, as well as fine.

In America, motor cars, like almost everything else, are produced in large quantities. The Locomobile is an interesting exception. The Locomobile is an *uncommon* car because it is produced in small numbers.

The fixed policy is to concentrate on a few fine cars, not more than Four Cars a Day. Only one motorist in every three hundred owns a Locomobile. The fact that only one thousand Locomobile closed cars have been produced in ten years also illustrates the Locomobile idea of Quality instead of Quantity.

Limiting our production of fine motor cars enables us to specialize in *details;* enables us to express the requirements of those Families who are accustomed to the note of Individuality in all their selections.

Uncommon Interiors, in wide variety, are designed by Mr. John J. Petit of New York, and finished in French Tapestries, English Broadcloths, French Velvets and Velours, selected and imported exclusively for Locomobile users.

Lighting Fixtures by the Tiffany Studios. Adequate and becoming interior lighting effects.

Silk Curtains, Laces, Braids, and Carpets woven specially to match the individually decorated interiors.

Durable and finely finished Coach Work. Designs executed after the manner of the leading Foreign and American stylists.

The
LOCOMOBILE COMPANY
of America
MAKERS OF FINE MOTOR CARS

VOLUME XXVI NUMBER FIVE

THE NATIONAL GEOGRAPHIC MAGAZINE

NOVEMBER, 1914

*

CONTENTS

**Young Russia—
The Land of Unlimited Possibilities**

100 Illustrations GILBERT H. GROSVENOR

16 Pages of 4-Color Work

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D.C.

$2.50 A YEAR 25 CTS A COPY

NATIONAL GEOGRAPHIC SOCIETY

HUBBARD MEMORIAL HALL
AVENUE OF THE PRESIDENTS AT M STREET, WASHINGTON, D. C.

HENRY GANNETT . . . . PRESIDENT
O. P. AUSTIN . . . . . . SECRETARY
GILBERT H. GROSVENOR, DIRECTOR AND EDITOR
JOHN OLIVER LA GORCE . ASSOCIATE EDITOR
O. H. TITTMANN . . . VICE-PRESIDENT
JOHN JOY EDSON . . . . TREASURER
F. B. EICHELBERGER . ASSISTANT TREASURER
GEORGE W. HUTCHISON, ASSISTANT SECRETARY

BOARD OF MANAGERS

1912-1914

JOHN JOY EDSON
President Washington Loan & Trust Company

CHARLES J. BELL
President American Security and Trust Company

DAVID FAIRCHILD
In Charge of Agricultural Explorations, Dept. of Agric.

C. HART MERRIAM
Member National Academy of Sciences

O. P. AUSTIN
Statistician

GEORGE R. PUTNAM
Commissioner U. S. Bureau of Lighthouses

GEORGE SHIRAS, 3D
Formerly Member U. S. Congress, Faunal Naturalist, and Wild-Game Photographer

GRANT SQUIRES
New York

1913-1915

FRANKLIN K. LANE
Secretary of the Interior

HENRY F. BLOUNT
Vice-President American Security and Trust Company

C. M. CHESTER
Rear Admiral U. S. Navy, Formerly Supt. U. S. Naval Observatory

FREDERICK V. COVILLE
President of the Washington Academy of Sciences

JOHN E. PILLSBURY
Rear Admiral U. S. Navy, Formerly Chief Bureau of Navigation

RUDOLPH KAUFFMANN
Managing Editor The Evening Star

T. L. MACDONALD, M. D.

S. N. D. NORTH
Formerly Director U. S. Bureau of Census

1914-1916

ALEXANDER GRAHAM BELL
Inventor of the telephone

HENRY GANNETT
Chairman of U. S. Geographic Board

J. HOWARD GORE
Prof. Emeritus Mathematics, The Geo. Washington Univ.

A. W. GREELY
Arctic Explorer, Major Gen'l U. S. Army

GILBERT H. GROSVENOR
Editor of National Geographic Magazine

GEORGE OTIS SMITH
Director of U. S. Geological Survey

O. H. TITTMANN
Superintendent of U. S. Coast and Geodetic Survey

JOHN M. WILSON
Brigadier General U. S. Army, Formerly Chief of Engineers

To carry out the purpose for which it was founded twenty-three years ago, namely, "the increase and diffusion of geographic knowledge," the National Geographic Society publishes this Magazine. All receipts from the publication are invested in the Magazine itself or expended directly to promote geographic knowledge and the study of geography. Articles or photographs from members of the Society, or other friends, are desired. Contributions should be accompanied by an addressed return envelope and postage, and be addressed:

GILBERT H. GROSVENOR, EDITOR

CONTRIBUTING EDITORS

A. W. GREELY
C. HART MERRIAM
O. H. TITTMANN
ROBERT HOLLISTER CHAPMAN
WALTER T. SWINGLE
ALEXANDER GRAHAM BELL
DAVID FAIRCHILD
HUGH M. SMITH
N. H. DARTON
FRANK M. CHAPMAN

Entered at the Post-Office at Washington, D. C., as Second-Class Mail Matter
Copyright, 1914, by National Geographic Society, Washington, D. C. All rights reserved

HARVARD DEC 14 1914

VOL. XXVI, NO. 5 WASHINGTON NOVEMBER, 1914

THE NATIONAL GEOGRAPHIC MAGAZINE

YOUNG RUSSIA

The Land of Unlimited Possibilities

BY GILBERT H. GROSVENOR

RUSSIA is not a State; it is a world. Thus wrote a famous publicist of the land of the Tsar as he contemplated the diversity of origin of its peoples, its wide range of climate, its great variety of resources, and the dissimilarity of aspirations of the human elements of which the empire is composed.

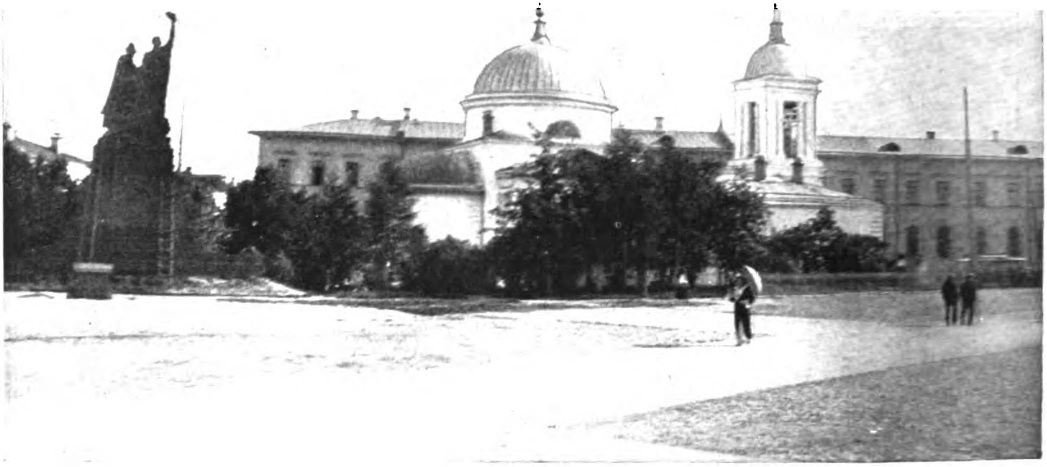
In the blood of its people is written the impress of the Orient and of the Occident; of the tropic south and the frigid north; of Confucianism, Mohammedanism, and Christianity. Its range of climate gives the Palm Beach touch to its Crimea and the breath of the north to its White Sea region. Its variety of resources makes it second only to the United States as the greatest food-producing country in the world; places it at the forefront among the nations as to mineral wealth, and gives it a greater timber supply than any other country. Its history borrows from Mongol-land, Lapland, Finland; from the Black Sea, the Baltic Sea, and the Okhotsk Sea. And its peoples have aspirations varying as widely as those of the Poles and the Mongols, as those of the Confucians and the Jews, as those of the Lapps and the Tatars.

In area Russia is the greatest compact empire on the face of the earth. It is larger than all of North America, larger than the combined area of the United States and Alaska, Canada, Mexico and Central America, Cuba, Porto Rico, Haiti, and the other islands of the Caribbean thrown in, and has a total area of 8,505,000 square miles as compared with South America's 6,851,000. The British Empire may be larger, but Britain must girdle the globe to find her people, and traverse the seven seas and the six continents to locate her possessions. Russia is more than twice as big as Europe, and occupies three-fifths of the area of that continent; it is half as big as Asia, and occupies nearly two-fifths of its area. Within its boundaries are embraced two-fifths of all territory of Europe and Asia combined. The Empire holds nearly one and a half times as much land in Asia as China has; its Asiatic possessions are three times as great as those of Great Britain, and they are forty times as great as those of Japan, even since the new Asiatic balance that followed the Russo-Japanese War was struck.

RICH IN ALL RESPECTS BUT ONE

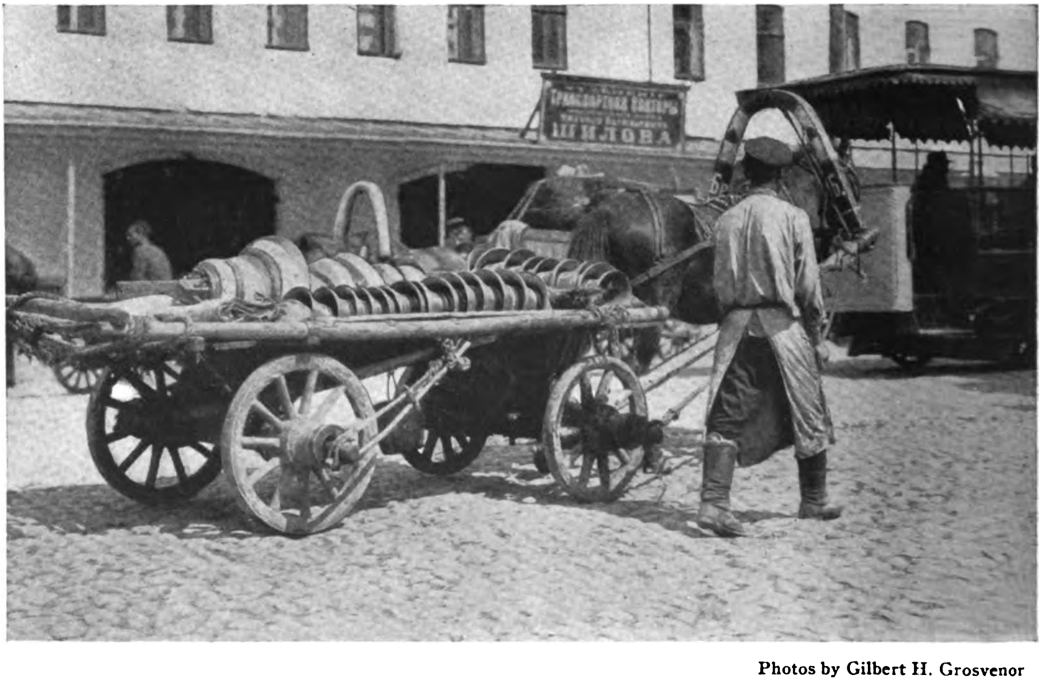
Indeed, Russia lacks but ten degrees of reaching half way around the earth, and possesses one-sixth of the landed area of the globe. It is divided into more than a hundred provinces—corresponding generally to our States—the largest of which is as much bigger than our imperial State of Texas as the Lone Star State is larger than Virginia.

But with all its geographic greatness Russia is about as poor in natural outlets



A TRIAL STATUE IN FRONT OF THE UNIVERSITY: NIZHNI-NOVGOROD

Before erecting a statue in Russia it is customary to submit the design to the vote of the people. On the left of this picture is shown one of these trial statues—an outline in wood and chalk of a memorial proposed to the prince, Pojarski, and the butcher, Minin, who aroused the Russians in 1613 and drove the Poles out of Russia. People are urged to send in criticisms to the municipal authorities, with a frank statement whether the design is liked or not. If the majority do not approve the design, it is withdrawn and another substituted for criticism until a satisfactory one is obtained. The custom has resulted in Russia having probably the best memorial groups and statues of any country.



Photos by Gilbert H. Grosvenor

A CART OF BELLS ON THE WAY TO MARKET: NIZHNI-NOVGOROD

Russia is the land of bells; the biggest bells in the world are those at Moscow (see pages 436-439) to the world as the smallest of the countries of the earth. Holland could be hidden in the vast reaches of the Russian plain, almost as a needle in a haystack, and yet Amsterdam alone does more international business than all the seaports of Russia together. Not one free outlet to the open sea does European Russia possess except on the ice-bound shores of the Arctic Ocean. Petrograd and Riga find their waterways to the sea only through the narrow straits that divide Germany and Sweden and Denmark and Norway. On the Black Sea is Odessa, with its immense harbor works, but the path from the Black Sea to the Mediterranean leads through the narrow channels of the Bosphorus and Dardanelles, held by alien hands. Asiatic Russia possesses Vladivostok as an outlet to the Pacific, but that is 2,000 miles farther from Petrograd than New York is distant from San Francisco, and a home port nearly 6,000 miles away is almost as distant in influence as though it were foreign.

Photo by Gilbert H. Grosvenor

MEDALS OF SERVICE

This decorated individual is not a high officer or the hero of many battlefields, but the messenger boy at police headquarters in Petrograd. Permission to take photographs must be obtained from the police in every city or town, and this necessitates a personal visit to headquarters. This man occupies the lowest position on the police staff, that of errand boy, and was delighted to pose for his picture. The medals denote length of service, presence at an anniversary of the Tsar, etc., and are greatly prized.

THE MOST PROLIFIC PEOPLE ON EARTH

If Russia is an empire in the extent of its dominions, it is none the less so in the number of its people. Within its boundaries and under its flag live enough people to populate the United Kingdom, the German Empire, and the French Republic, with enough left over to repopulate half of the dual monarchy of Austria-Hungary.

Nor has Russia reached the limits of its human resources if it shall emerge from the war with the integrity of its territory maintained. Its 172,000,000 people are the most fecund on earth. During the 40 years from 1872 to 1912 European Russia, notwithstanding her excessive death rate, doubled her population and the larger ratio of that growth was toward the end rather than toward the beginning of that period. Assuming that the same ratio will keep up, at the end of the present century Russia will have over six hundred million people—

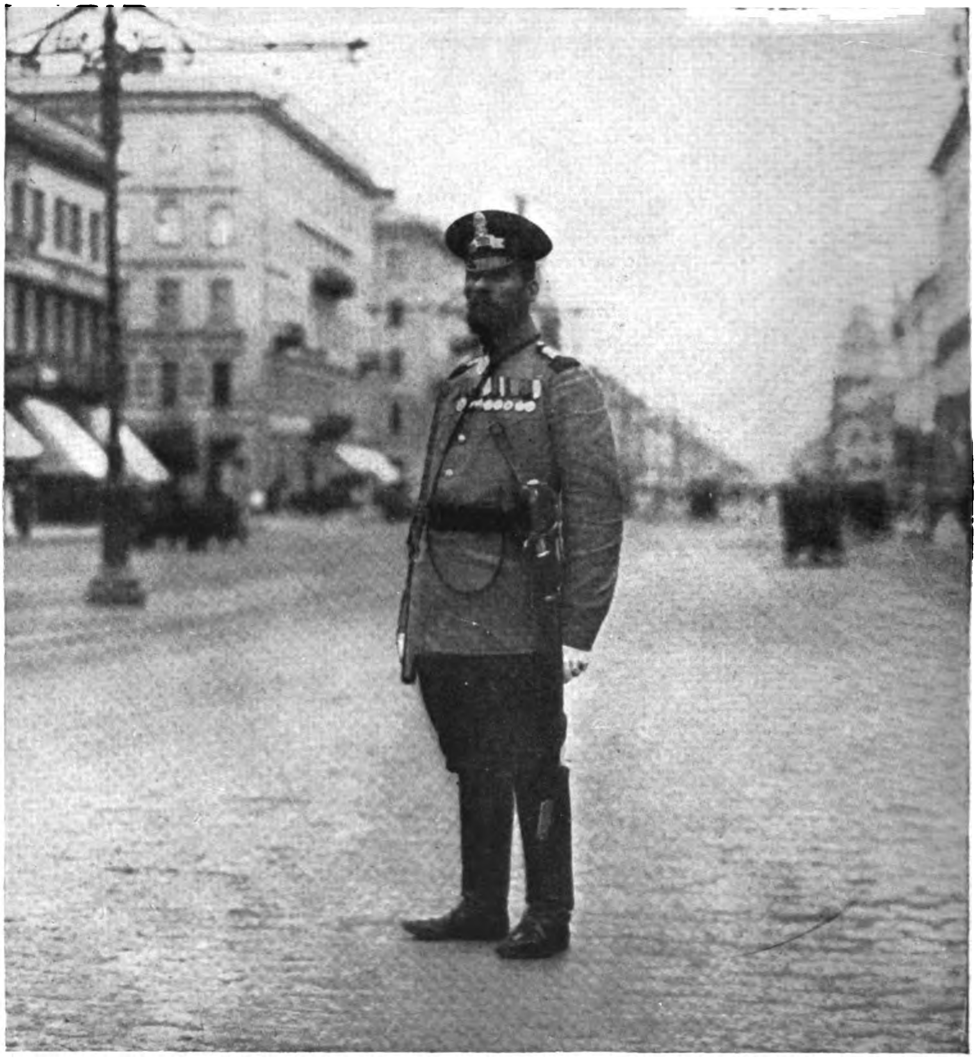


Photo by Gilbert H. Grosvenor

A TRAFFIC POLICEMAN: PETROGRAD

The official in Russia who has not at least six medals to display is unhappy indeed; but the medals are not worn in a spirit of vanity. Their possession gives self-confidence and inspires devotion, not arrogance or conceit. The Russian likes to feel that his zeal, faithfulness, and ability are recognized by his superiors, and wears his decorations constantly, so that all may see them. Nor does the fact that medals are almost as common as buttons give them any less distinction or value. This policeman was originally a moujik, for the peasants, with training and experience, make splendid policemen and soldiers. Nowhere in Europe is there a finer body of men than the policemen in Petrograd, Moscow, Nizhni-Novgorod, and the other big cities of Russia, all of them originally peasants.

enough to offset the present population of all the continents except Asia.

RUSSIA A YOUNG NATION COMPARED TO ENGLAND

From such a record of size, of bigness in everything, we should expect Russia to be an old nation, like Great Britain, with perhaps a thousand years of unhindered growth behind her. But, as a matter of fact, Russia is a youth among the nations compared to England, a stripling whose full stature and breadth are still a subject of conjecture and speculation.

Russia is young because she never had

PASSING A SHRINE IN MOSCOW Photo by Gilbert H. Grosvenor

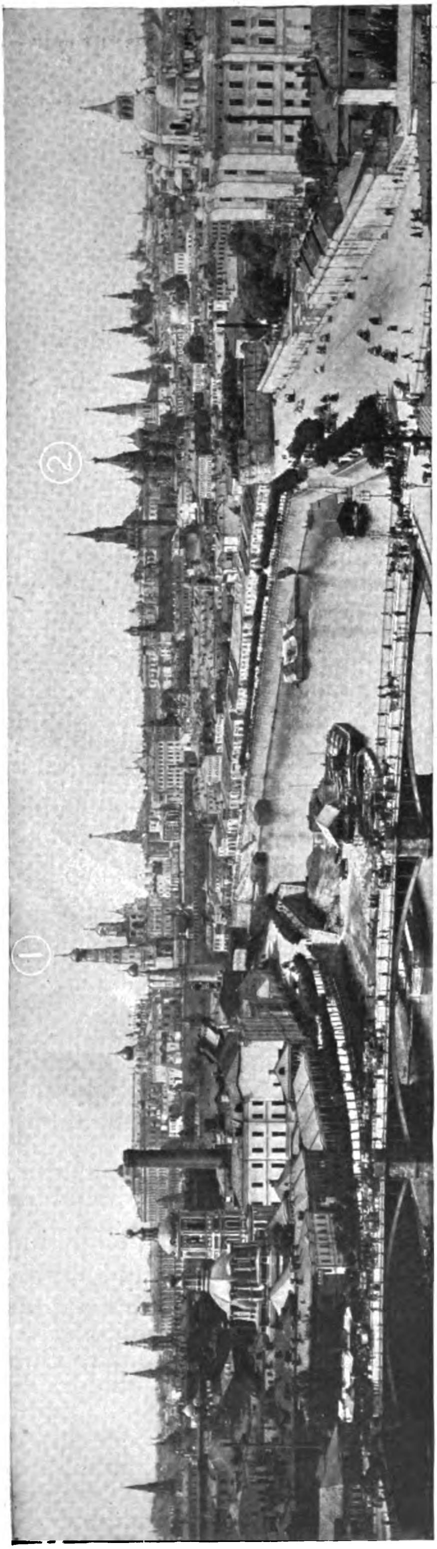
Moscow is a city of shrines and churches. In every square and on every street corner there is some holy picture before which the devout uncover and make the sign of the Russian cross. This picture shows on the right one of these street shrines—an icon before which a candle is burning and a tankard of holy water. The passer-by may take a sip of the holy water from the common cup. The cab driver has uncovered and is making the sign of the cross as he rattles by.

a chance to grow until recent years. Her geographical shape or condition was such that for centuries her people were constantly being enslaved or despoiled by stronger neighbors.

European Russia is an enormous plain 2,000 miles long and about a thousand miles wide. In it there are no mountains and no hills more than a few hundred feet high. It is so flat that the rivers are sluggish and tortuous, and seem uncertain in which direction to flow. For instance, its greatest river, the Volga, 2,400 miles long, has an average drop of only 4 inches to the mile. This plain served as a highway for the successive barbaric hordes on their way from Asia to western Europe.

The Russian Slavs, whose origin we will not discuss in this brief article, were among the last to come, settling in the western portion of the Russian plain. On all sides of them were enemies—Finns, Swedes, Lithuanians, Poles, and Tatars. The plain offered a splendid arena for fighting, and as there were no geographical fences to keep them out, these enemies were incessantly attacking the Russians, devastating their fields and burning their wooden cities, making it necessary for the unfortunate inhabitants continually to rebuild. As a result, there is nothing old in Russia—no ancient fortresses like the feudal castles of the Rhine and the Danube, no walled cities like Wisby, in Gotland, or some of the noted towns of Germany.

If the Russians had not been one of the most prolific races the world has ever known, they would have been obliterated in those bitter years. Only a race of extraordinary vitality, of extraordinary tenacity could have survived what they suffered.



THE HORIZON OF MOSCOW IS MARKED BY COUNTLESS GILDED SPIRES AND STARRY DOMES

The Russians call Moscow "Holy Mother Moscow," because it is the center around which grew the Russian Empire and Russian church. There are 500 churches and cathedrals in Moscow and many hundreds of shrines; (1) indicates Bell Tower, see p. 429, and (2) St. Basils, see p. 493

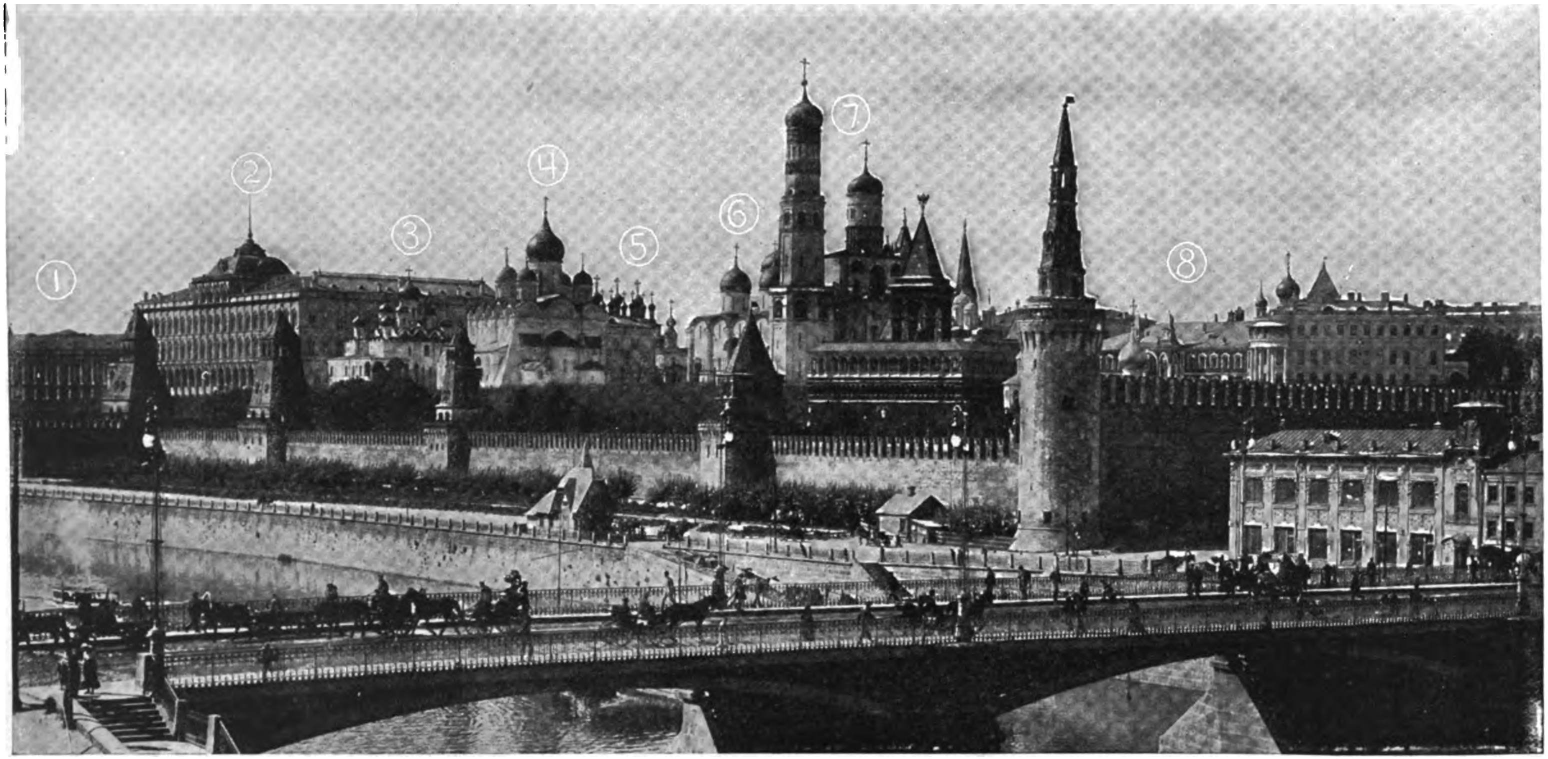
MOSCOW IS THE MOTHER OF RUSSIA

European Russia, as we know it, gradually grew from Moscow as a center—Mother Moscow, the Russians call her. An old Slavic prince was attracted by a small hill, probaby not over 100 feet high, on the Moskva River, in the heart of this great plain. It seemed to him to be the best natural fortress within many miles. So on this little eminence, which would not have been noticed as having military value in any other country of Europe, he built a fort, surrounded with high wooden walls and deep moats. It became known as the Kremlin, and within the fortress soon gathered merchants and traders who brought considerable population and wealth.

But it could not escape the torch and greedy clutch of the Tatar. In 1237 the Golden Horde laid waste the country, burned Moscow to the last house, and slew the reigning prince. The city was rebuilt, then again burned to the ground, in 1380, by another Tatar mob, though meanwhile the princes of Moscow had been paying heavy tribute to the Tatar Khan. "The Tatars slew without mercy; 24,000 perished. They broke into the churches and treasuries, pillaged everywhere, and burned a mass of books, papers, and whatever they could not otherwise destroy; not a house was left standing save the few built of stone."

But the princes of Moscow were shrewd and patient, their people the most enduring and prolific in history. Again they rebuilt the city, and Moscow soon became more prosperous than ever, with many fine churches and monasteries.

After Constantinople had fallen before the Turkish sword and the Byzantine Empire disappeared, the niece and heiress of the last Constantine, Sophia, married the Prince of Moscow, Ivan III. She brought to the Russian royal house the double-headed eagle, which for 1,000 years had been the emblem of the Byzantine Empire, but, more



VIEW OF THE KREMLIN, MOSCOW, SHOWING THE HIGH WALL AND LOFTY WATCH-TOWERS WHICH INCLOSE IT

The Kremlin is the keystone of Russian history. The men who lived and ruled in it were those who, out of a collection of petty and weak princedoms, created the mighty Russian Empire. Originally a fort, it is now museum, mausoleum, and treasure house of things precious in Russian life and Russian religion. In no other equal area in the world is there crowded such an array of historic cathedrals and monasteries, sacred relics, trophies of war, sacerdotal robes, tombs of human saints and human devils, gold and silver vessels, precious stones, pearls, and jewels to the value of millions of dollars, etc.

The principal buildings, reading from the left, are: (1) Treasury and Museum; (2) Grand Palace; (3) Cathedral of Annunciation, where the Tsars are baptized and married; (4) Cathedral of Archangels, where all the Tsars were buried until Peter the Great; (5) Cathedral of Our Saviour behind the Golden Gate (see page 441); (6) Cathedral of Assumption, where all Tsars are crowned (see page 435); (7) The Bell Tower (see page 436); (8) Monastery of Miracles (see page 440).

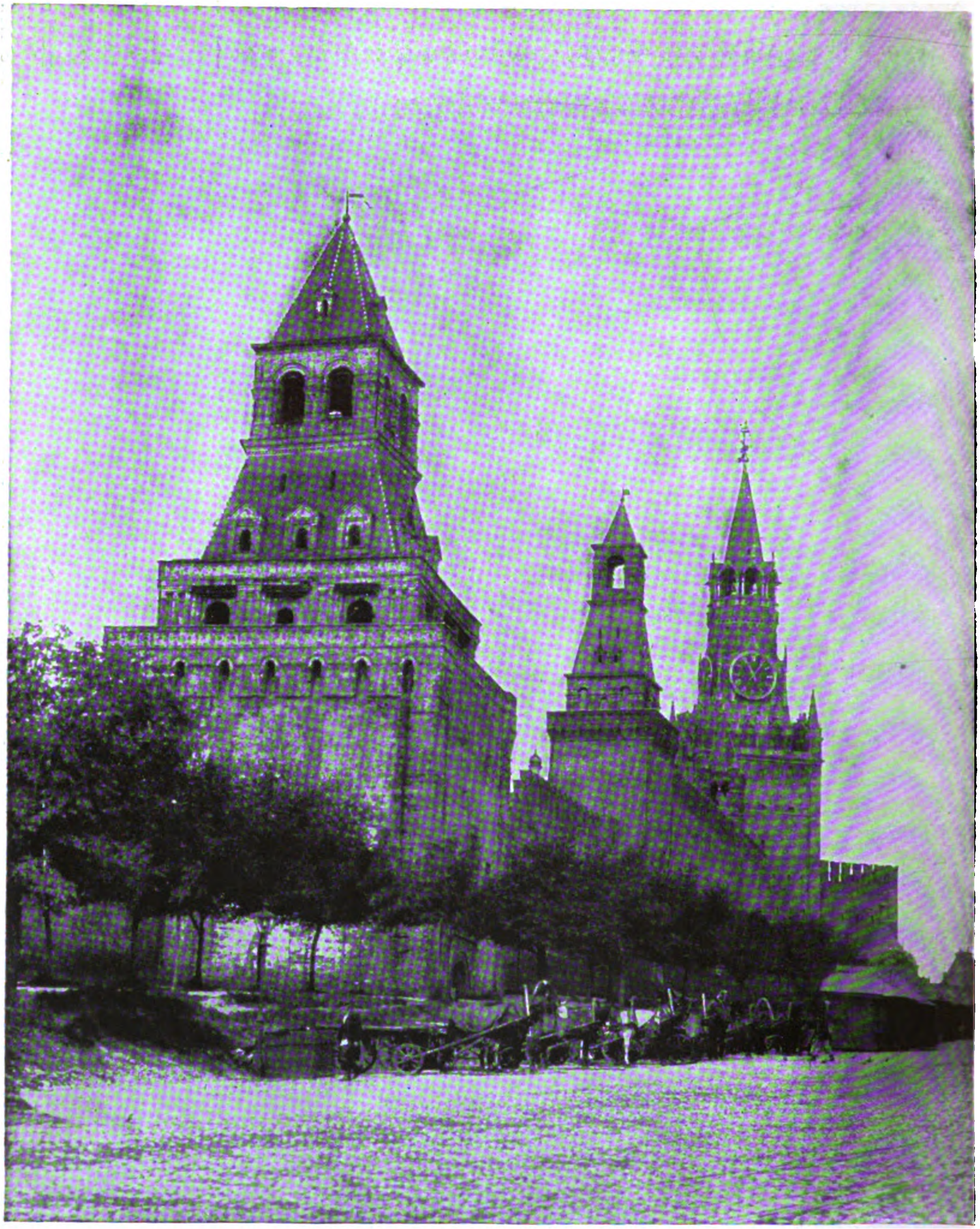


Photo by Gilbert H. Grosvenor

THE BATTLEMENTS OF THE KREMLIN: MOSCOW

In early days the walls of the fortress were built of oak, but the wooden walls yielded so often to fire that the princes of Moscow finally attempted to construct them of stone and brick. Though this period was three centuries after the English, French, and Germans had built lasting memorials in stone—Ely Cathedral, Notre Dame, Strasburg Cathedral, and many others—the Muscovites were still so ignorant of masonry construction that the walls they built soon fell to pieces. Ivan III, the same who married the heiress to Constantinople (see page 428), thereupon imported Italian architects and Italian masons, who erected the present imposing battlements and taught the people how to manufacture good brick and mortar.

important than all in Russian eyes, she made Moscow the lawful heir to Constantinople and the head of the Greek Orthodox Church.

Sophia found the Tatar yoke unbearable, and kept asking her husband, "How long am I to be the slave of the Tatars?" Her husband had been most successful in overcoming neighboring princes and adding their domains to his principality, and finally, in 1478, when the customary messengers came from the Tatar Khan demanding the usual tribute, Ivan threw the edict on the ground, stamped and spat on it, and killed all the ambassadors save one, whom he sent back to his master. The enraged Tatars sought revenge, but their efforts availed naught against Ivan's armies.

THE RESULTS OF TATAR RULE

Moscow, after nearly 300 years of subjection to the Tatars, was freed. But the hatred of Mohammedan rule had been bred in the bone of every Slav for ten generations—a hatred that has remained in the race to this day, and has prompted Russia always to help the oppressed in any fight to throw off the Mohammedan yoke. For this reason they were willing to sacrifice 379,000 lives in their wars against the Turk; to help Greece to freedom in 1828, and again Servia, Rumania, and Bulgaria in 1878, whereas no other European nation ever expended anything but words in behalf of the subject Christian; for this reason, Russia alone of the great Christian powers (England, France, and Germany) has not once been the ally of the Turk.

But the influence of the Tatar upon the blood of the Russian people has been much exaggerated. The expression, "Scratch a Russian and you find a Tatar underneath," is commonly attributed to Napoleon. If Napoleon did originate this remarkable statement, he partly revenged himself for his defeat, for the quotation is widely but wrongly accepted as a true description of the Russian. As a matter of fact, the Tatars did not settle among the Slavs. They were content to rule from afar, with periodic visitations to ravage and plunder, in order that there might be no delay in the remittance of tribute. But their contribution to the racial stock of Russia was comparatively little.

IVAN THE TERRIBLE

Some years after the Ivan who married the heiress to Constantinople came another Ivan, called the Terrible, who assumed the title of Tsar, crushed the nobles, conquered Siberia, and extended his dominion to the Pacific. "All histories are spotless in comparison with that of Moscow under him—a creature of unparalleled ferocity and inconceivable wickedness. . . . He went to the torture-rooms with joy, and came away from its fiendish practices invigorated, refreshed, and gay."

This was the age of Shakespeare and Bacon in England.

Ivan slew his oldest son with his own hand in a fit of rage. His greatest crime was the sacking and destruction of the ancient city of Novgorod, whose infidelity he suspected. "The Tsar and his son went to an enclosure specially reserved for the torture of their victims, and with their lances prodded those who were not quickly enough dragged to the place of torment. Chroniclers say that from 500 to 1,000 were slain in cold blood before him each day of his stay. Some were burned, some racked to death, others drowned in the Volkhof, run in on sledges or thrown in from the bridge—soldiers in boats spearing those who swam. Infants were impaled before the eyes of their mothers, husbands butchered along with their wives. Novgorod, at that time larger and of greater commercial importance than Moscow, was so injured that she never since acquired the rank of even a third-rate town."

But in spite of his cruelty and superstition, Ivan was in many respects a successful ruler, reducing the Tatar kingdom and extending the Russian dominions to the Pacific by the help of a freebooter, Yermak, who swept the Siberian steppes as clean of Russian foes as Drake at the same time was clearing the seas for England. A hundred years before Peter the Great, Ivan "opened the Russian window to the West"—brought in

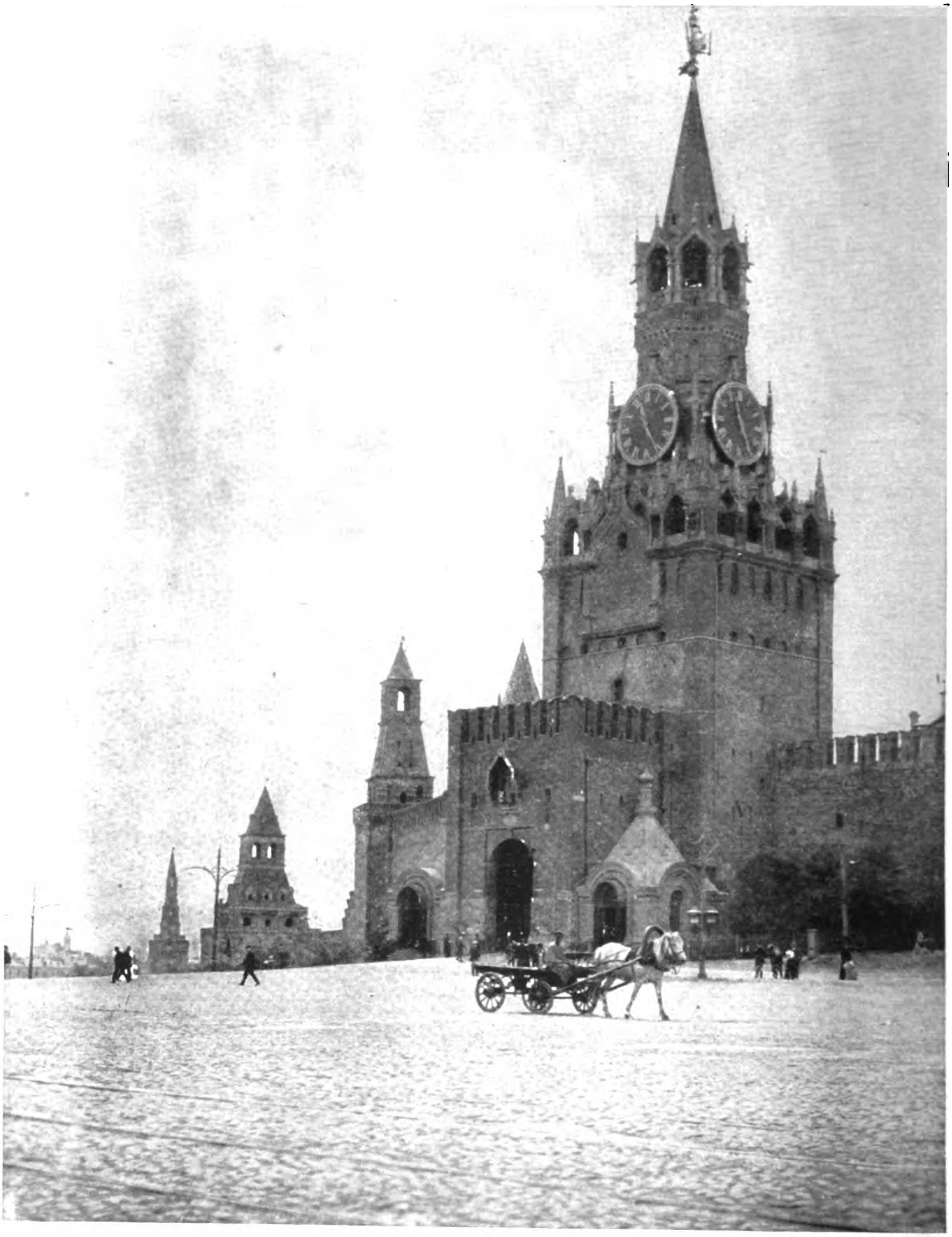


Photo by Gilbert H. Grosvenor

THE BEAUTIFUL REDEEMER GATE TO THE KREMLIN: MOSCOW

Every man when passing under this gate must uncover. In the old days all the religious processions left and entered the Kremlin by this gate, the metropolitan, or head of the church, heading the procession mounted on a donkey, which was led by the Tsar, bareheaded. When the Russians rose against the rule of the Poles, according to tradition, they forced their way into the Kremlin through this gate (1613), the metropolitan leading the way and carrying an icon of our Saviour behind him. Later this icon was mounted over the gate (see next page), and the Tsar, Alexis, ordered that any man who failed to uncover as he passed through should be compelled to prostrate himself 52 times.

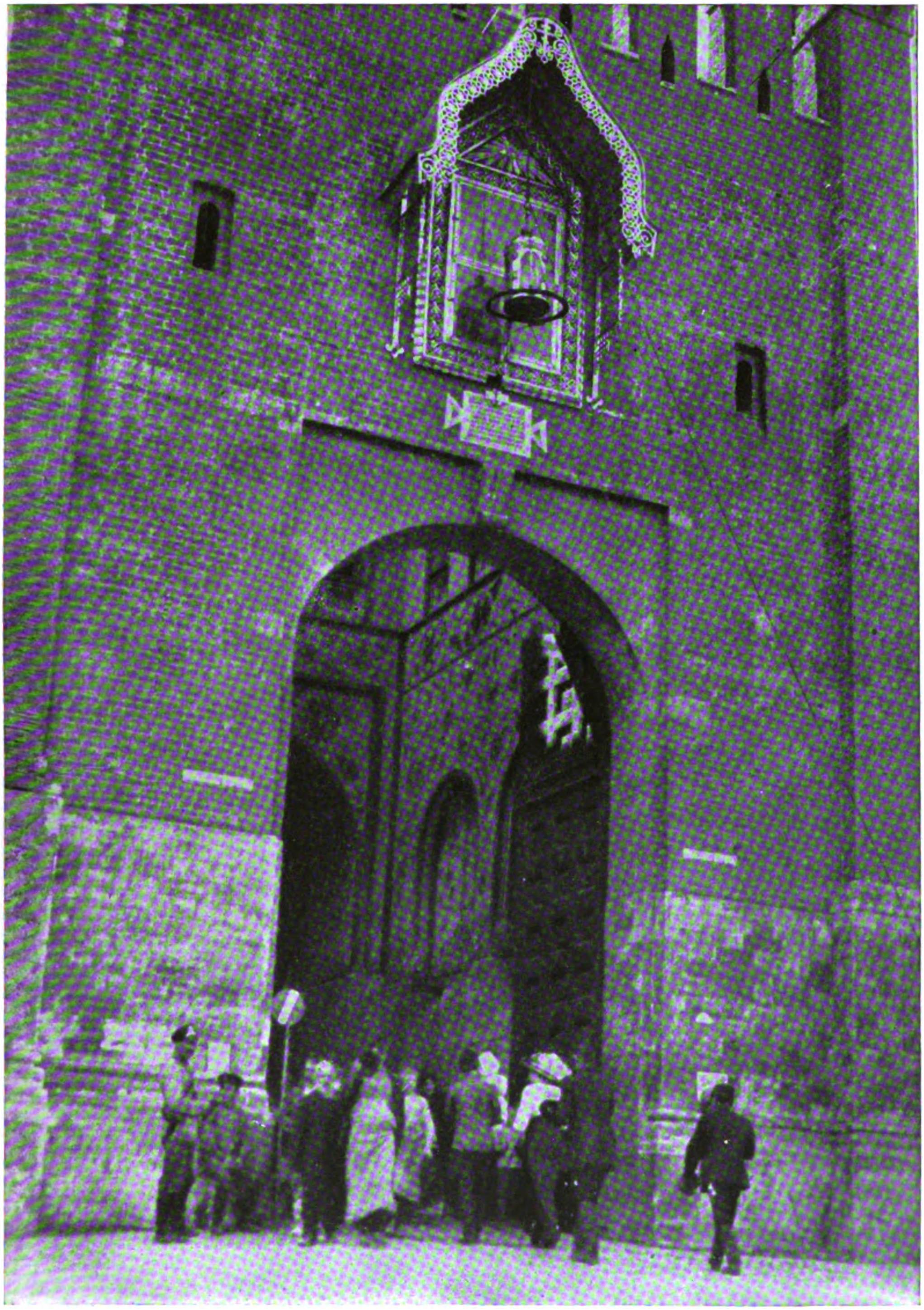


Photo by Gilbert H. Grosvenor

A NEAR VIEW OF THE HOLY OR REDEEMER GATE: MOSCOW

Note that all the men have removed their hats. A burning candle is always kept in the lantern before the picture—the icon of Our Saviour (see page 432)

Photo by Gilbert H. Grosvenor

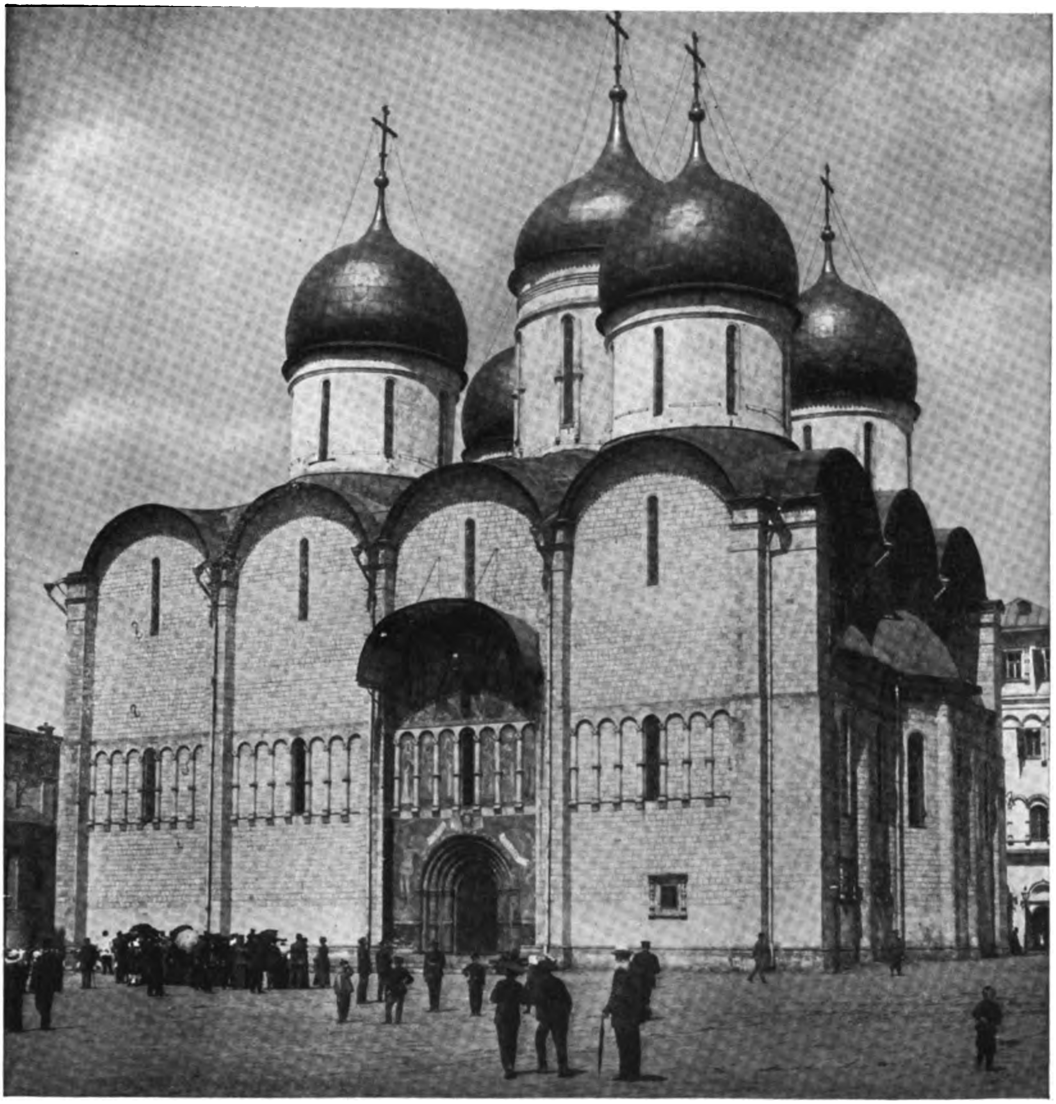
INSIDE THE HOLY GATE: MOSCOW

The women are bringing their babies to be blessed in the cathedrals and to obtain merit by kissing the relics, bones, etc.

the printing press and welcomed English sailors to his court. His ambassador, Nepeïa, in London, at the festival of the Garter, sat beside the Queen. "Never," the Russian historian Karamzin naively says, "had the Russian name been honored to such a degree."

But after him came the whirlwind—years of greater misery and shame to the Russians than any they had yet experienced: a weak-minded ruler, interminable civil wars, a royal decree forbidding the peasants to leave the lands, thus reducing them to serfs or slaves; an impostor who actually seized and held the throne for one year, and the most appalling famine that ever devastated the capital of a nation. "Men were entrapped into dwellings, and killed and eaten. Pies made of human flesh were openly sold in the market. One hundred and twenty-seven thousand corpses remained for days unburied in the streets, and an eye-witness relates that 500,000 persons were carried off by the awful visitation."

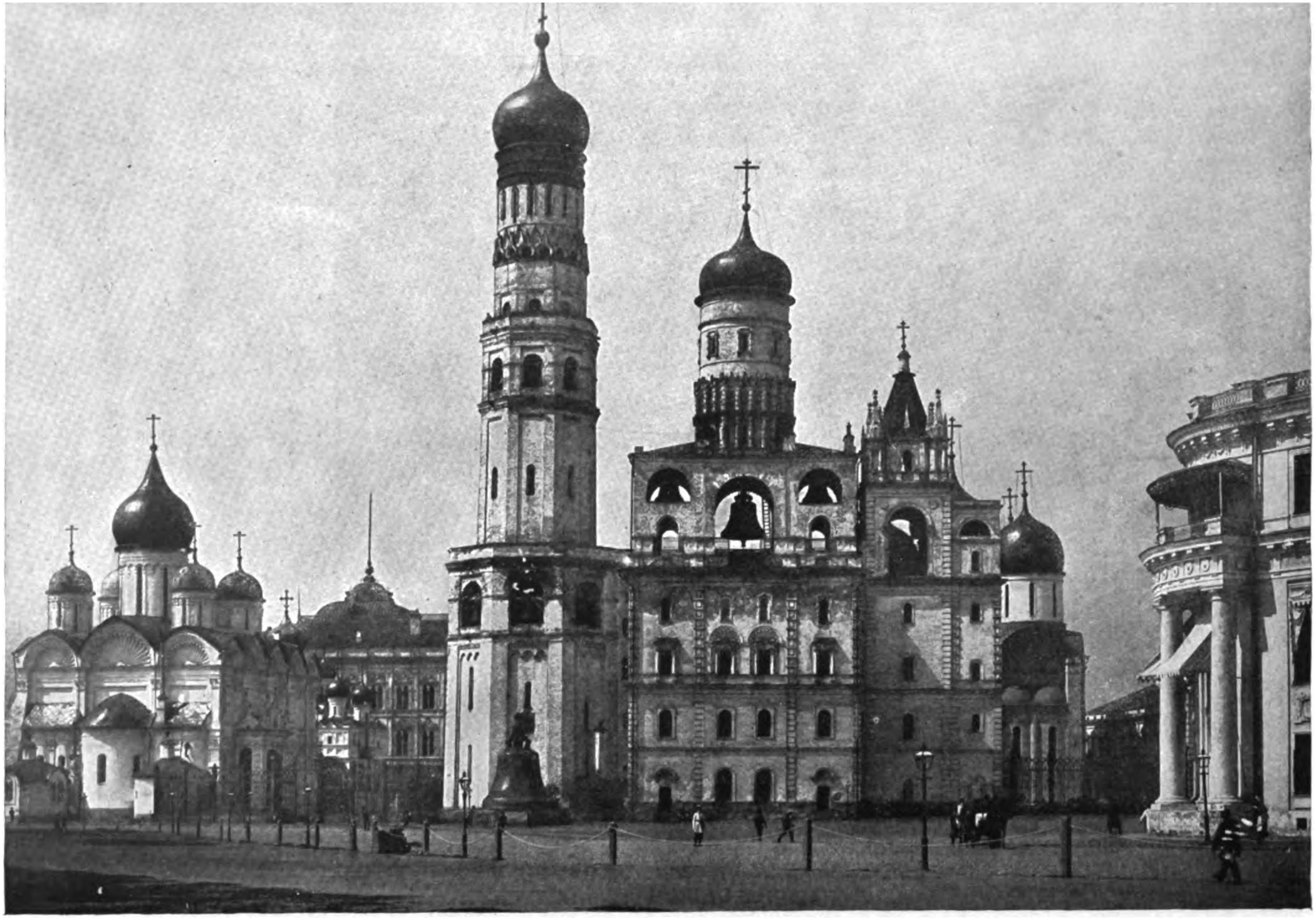
Anarchy continued. No one could



THE CATHEDRAL OF THE ASSUMPTION, WHERE THE TSARS ARE CROWNED, IN THE KREMLIN: MOSCOW

This magnificent structure was built near the end of the 16th century, to replace the old wooden church which had been repeatedly destroyed by fire. In it are many old icons and precious relics, among them "one of the nails with which our Lord was fastened to the cross, a fragment of His robe, and a fragment of the Virgin's robe; the hand of St. Andrew, the head of St. Gregory, the theologian, and that of St. John Crysostom."

The icon of the Holy Virgin of Vladimir is pointed out as having been painted by St. Luke. It is adorned with jewels valued at half a million dollars, the splendid emerald alone being worth $50,000. Other treasures include a Bible presented by the mother of Peter the Great, which is so large that the services of two men are required to carry it. It also is studded with emeralds and precious stones. When Napoleon's army was in Moscow a cavalry regiment was stabled in the cathedral. The troops took away five tons of silver and 500 pounds of gold from this cathedral alone, but the Cossacks recovered most of the booty, and in gratitude then presented a solid silver chandelier weighing 900 pounds, with 46 branches, which hangs in the cupola.



ONE OF THE WONDERS OF RUSSIA: THE BELL TOWER IN THE KREMLIN, WITH THE CATHEDRAL OF ARCHANGELS ON THE LEFT

The tower was built by Boris Goudonov, in order to give employment to the people at the time of the great Moscow famine (see text, page 434). The tower contains 34 bells, the largest weighing 65 tons, which is clearly seen hanging in the center of the building (see also illustration, page 438). All the bells are large, one of the smaller being shown on page 439, and two of them are of silver. It was this same Boris Goudonov who reduced the peasants to serfdom, in which condition they remained until 1861. The Cathedral of Archangels (on the left) contains the tombs of all the Tsars and Grand Dukes until Peter the Great, the body of Ivan the Terrible resting beside that of his son, whom he slew with his own hand (see page 431).

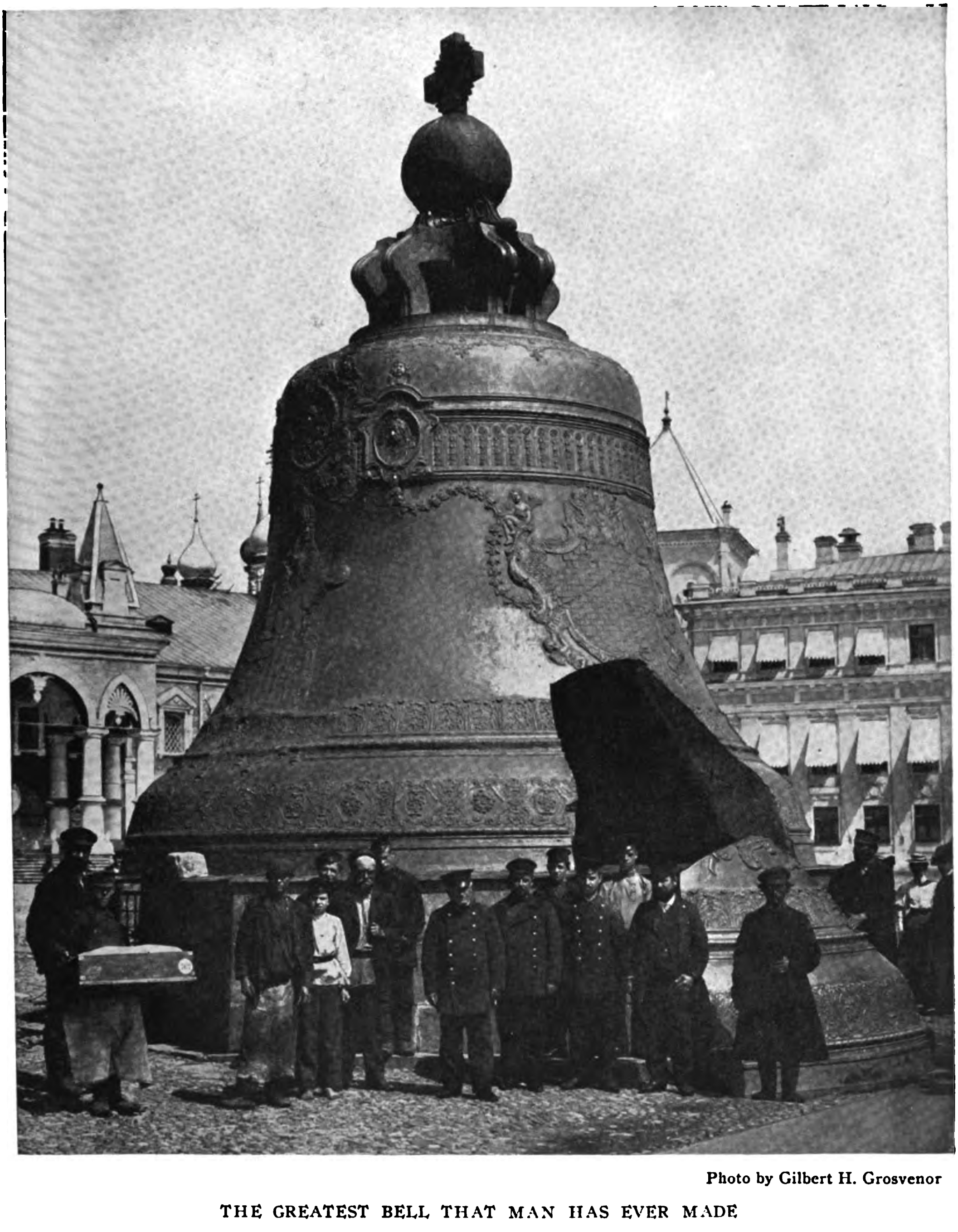


Photo by Gilbert H. Grosvenor

THE GREATEST BELL THAT MAN HAS EVER MADE

This huge bell was built by Boris Goudonov to hang in the bell tower, but when completed was found too heavy for the building to support. It was therefore hung on a platform outside the tower (travelers to Moscow in 1611 reported that twenty-four men were needed to swing the tongue), but a few years later a fire in the Kremlin destroyed the platform and the bell was broken. It was recast some years later, only to be again broken. A third time it was recast, this time even larger than before, but the water poured on it when it was red-hot, in another fire, caused it to crack. It fell again and remained buried for 100 years at the foot of the tower, until Emperor Nicholas I, in 1835, had it excavated and mounted, as shown in this picture. It is believed to weigh about 200 tons.

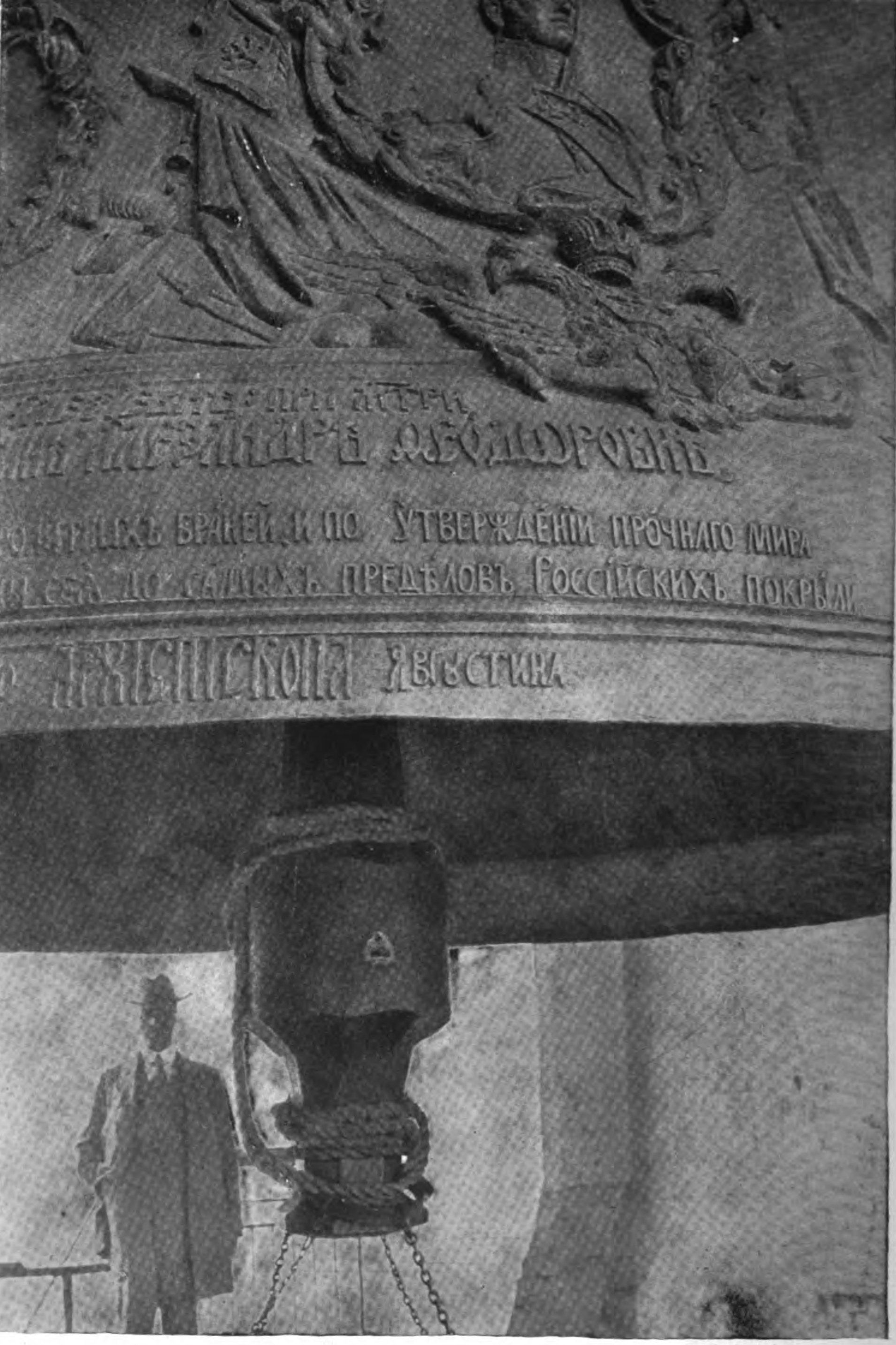

БРАНЕЙ, И ПО УТВЕРЖДЕНІИ ПРОЧНАГО МИРА
ПРЕДѢЛОВЪ РОССІЙСКИХЪ ПОКРЫЛИ
АВГУСТИНА

Photo by Gilbert H. Grosvenor

THE GREATEST BELL IN SERVICE

This immense bell hangs in the bell tower and can be distinctly seen on page 436. It eighs 64 tons, or more than twice as much as the biggest bell of western Europe (see page 39), and was cast after the retreat of Napoleon from Moscow from some of the old bells. is beautifully decorated with portraits of the Emperor Alexander I and his wife, Elizabeth, nd of his mother and brothers. It is rung only a few times a year, at Christmas and aster and on the Tsar's birthday. The man shown in the picture is standing exactly in the nter of the bell, of which this is probably the first photograph made in the belfry.

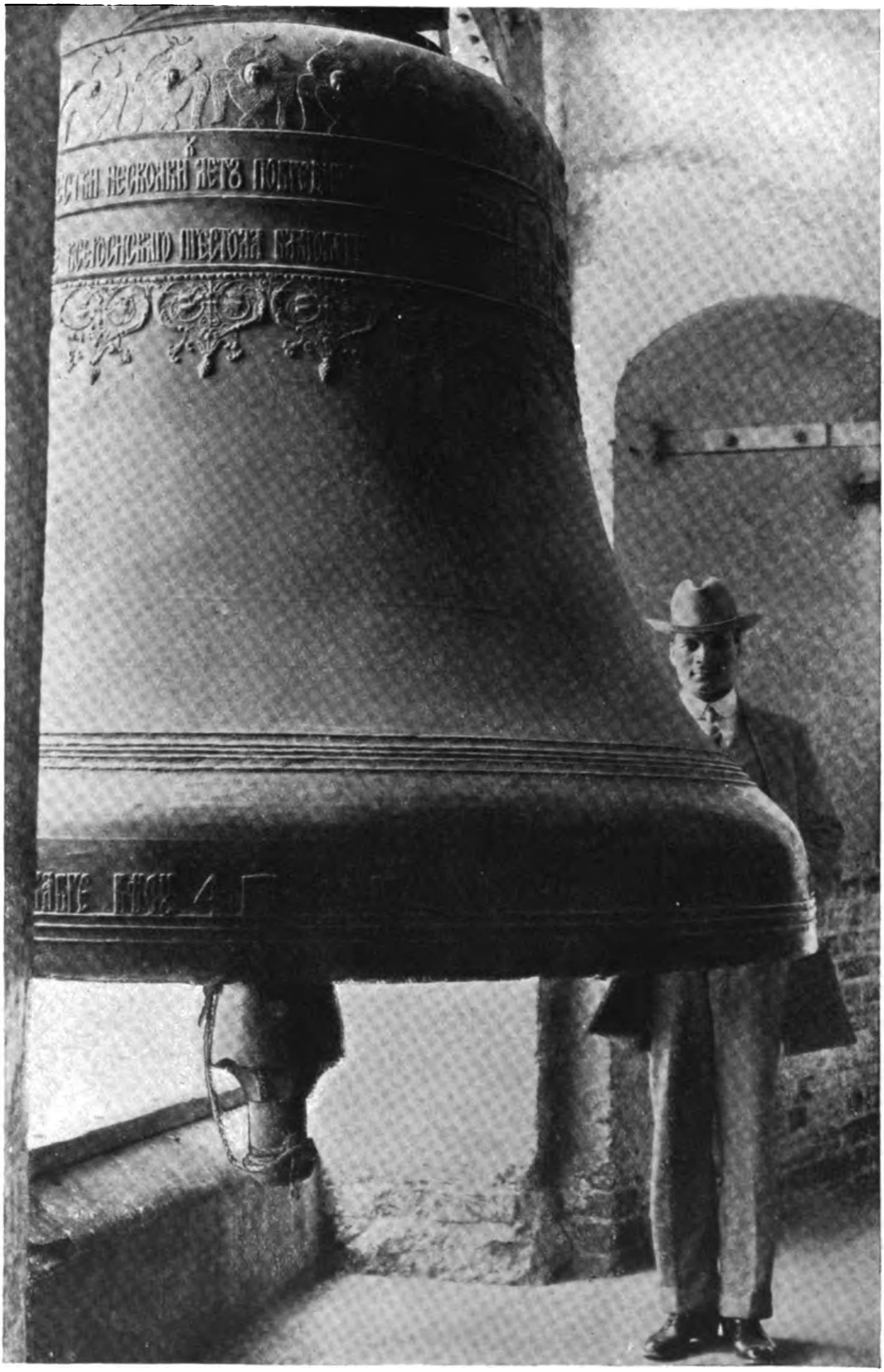


Photo by Gilbert H. Grosvenor

ONE OF THE 34 SMALLER BELLS IN THE BELL TOWER AT MOSCOW

It compares very favorably with the biggest bells of western Europe. The largest bell outside of Russia is the Emperor Bell, in the Cologne Cathedral in Germany, which weighs 27 tons, and the Great Bell in St. Paul's Cathedral, weighing 18 tons. Big Peter, in the York Cathedral, weighs only 11 tons, or no more than the broken fragment from the Queen of Bells, shown on page 437.

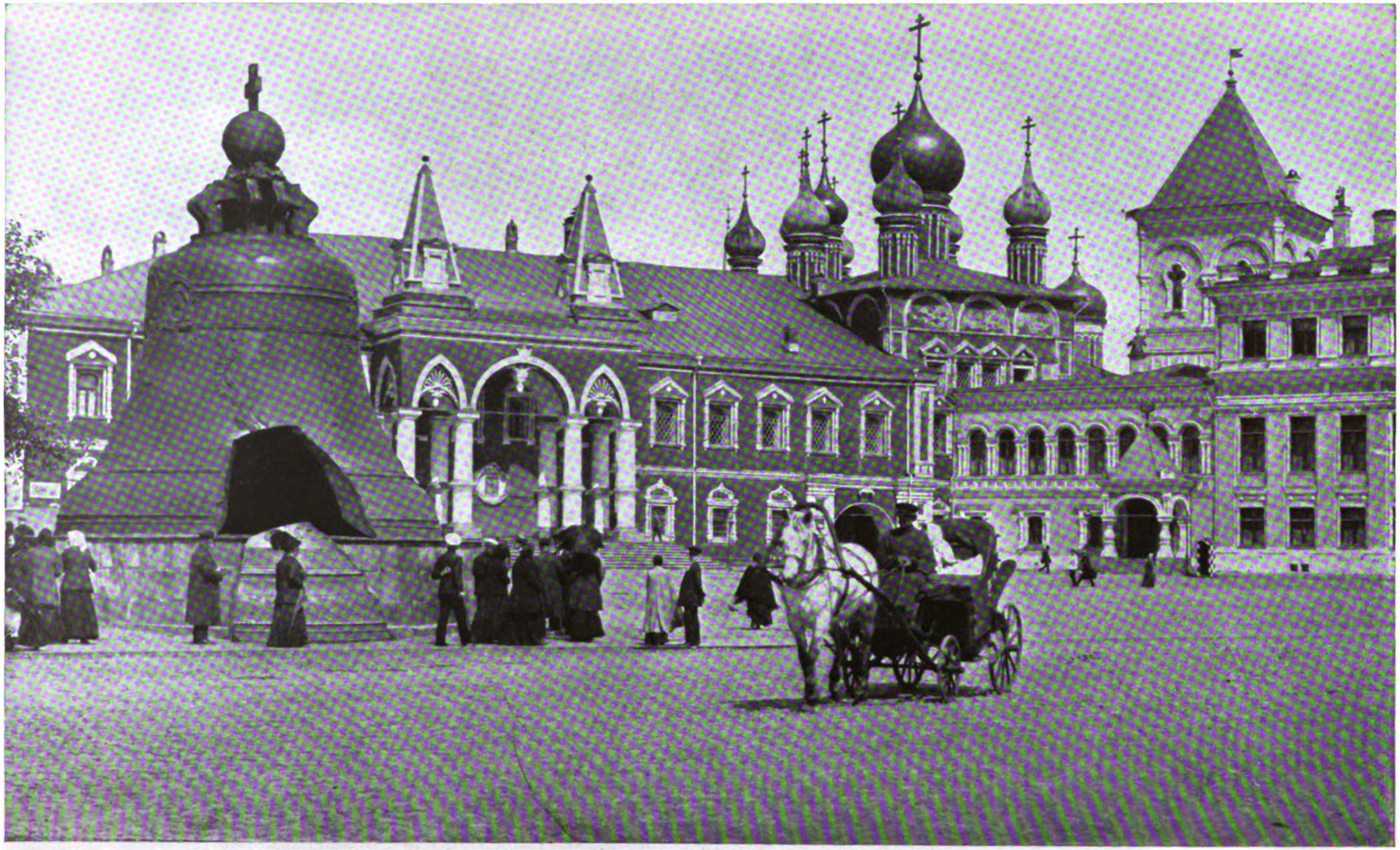


Photo by Gilbert H. Grosvenor

THE RICHEST AND MOST CELEBRATED MONASTERY IN MOSCOW: MONASTERY OF MIRACLES (CHUDOV)

Here the ambassador of the Tatar Khan, to whom Moscow paid tribute for nearly 300 years, stabled his horses; but when the wife of the Khan was cured of an illness by Alexis, head (metropolitan) of the Russian church, she made a gift of the land to the church. Alexis then founded this monastery, whose buildings, like all other buildings in the Kremlin, have been rebuilt many times. The library contains several hundred valuable manuscripts on parchment, some of them dating from the thirteenth century. The utensils of gold and silver are priceless. It is still customary for parents to bring their children to the shrine to be blessed before they are put into school. At the time of Catherine II the monastery had 19,000 male serfs attached to it.

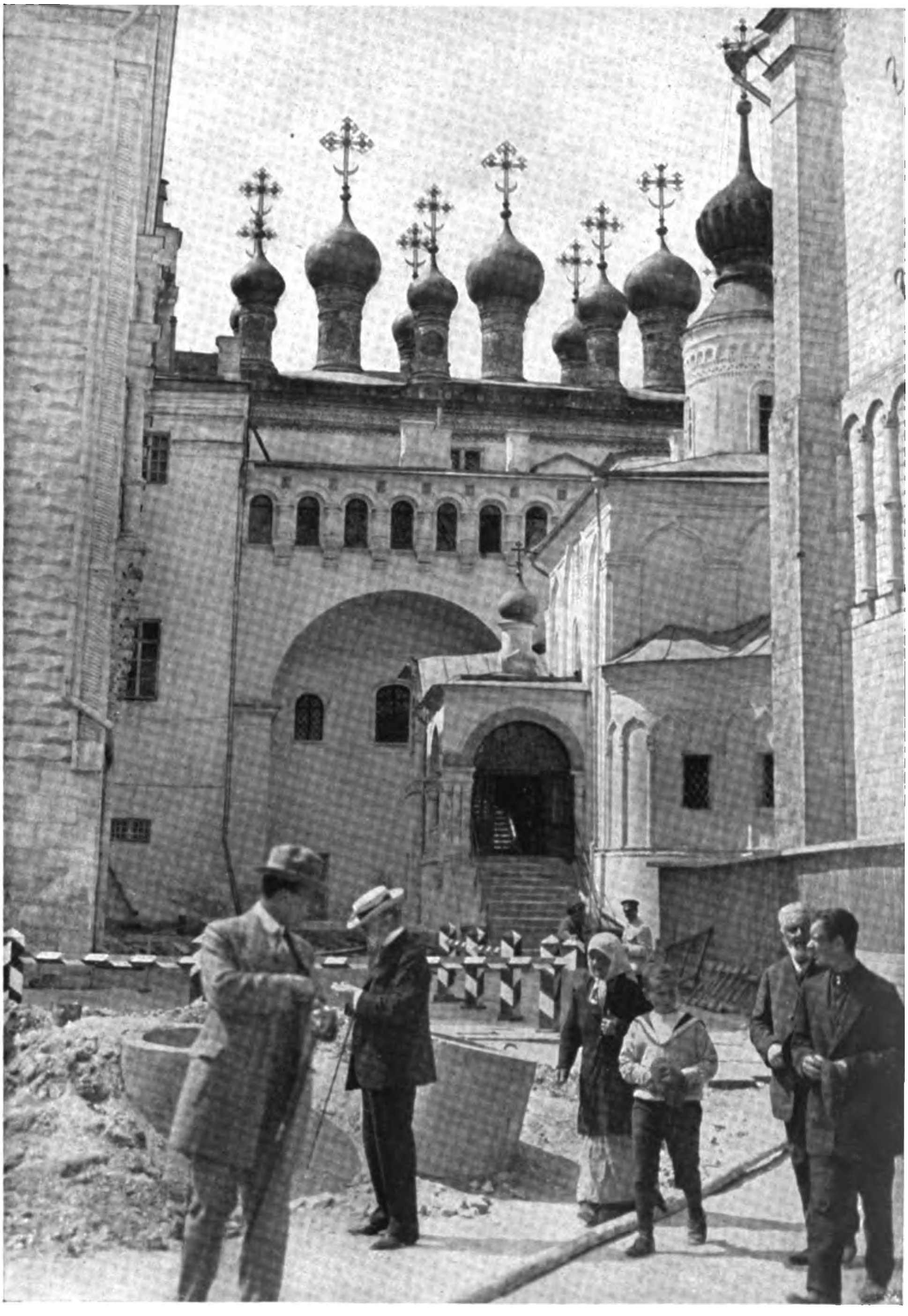


Photo by Gilbert H. Grosvenor

THE CATHEDRAL OF OUR SAVIOUR BEHIND THE GOLDEN GATES

This little church, built during the seventeenth century, was originally the private chape of the Tsars. It is surmounted by twelve gilded cupolas, of which eleven may be seen i part in the photograph. The most treasured relic in the church is a sacred icon (hol picture), said to have been brought to Moscow by Princess Sophia Palaeologus, the heires to Constantinople, who married Ivan III in 1472 (see page 428). With Sophia came number of priests, who brought from Constantinople as many holy relics as they had bee able to save when the city fell before Mohammed. The ground within the Kremlin walls i so sacred in Russian eyes that many remain uncovered while passing the cathedrals. Not the boy and two men on the right.

agree as to who should be the Tsar. Amid the divided camps it was easy for the Polish king to overrun the country and to seize Moscow, from which he actually reigned. So exhausted was Russia that the Empire seemed crumbling to pieces before the attacks of Swede, Turk, and Pole. But in this hour of adversity the Russian church, as during the centuries of Tatar rule, alone refused to submit, and in her monastery fortresses kept alive the spirit of resistance until a butcher called Minin and a prince, Pojarski, started a revival of the masses so violent that in a few months every Pole was swept out of Russia. But Moscow for perhaps the tenth time was burned to the ground.

At the Grand National Assembly which followed, and in which princes and peasants participated, Michael Romanov was chosen Tsar. Thus the present dynasty, which has brought stability, immense growth, and enormous power to Russia, was founded six years after the founding of Jamestown, Virginia, and only seven years before the Pilgrim fathers landed at Plymouth, Massachusetts.

PETER THE GREAT

Among the colossal figures that loom up above the dead level of humanity as a great mountain towers above the plain, history offers no better example than Peter the Great, Russia's remarkable ruler at the close of the seventeenth and during the beginning of the eighteenth century. He found Russia an all but barbaric nation; he left it on the highroad to civilization and one of the earth's greatest powers.

He was born as rich as Midas, with the silver spoon of plenty in his mouth; but he lived as poor as a hermit, and toiled with hand as well as with brain that his country might come out of its barbaric stupor and into civilized activity. He justified his savage treatment of his people by saying that it was only through such methods that he was able to "dress his herd of animals like men;" and yet he lived with them and shared their toil when Russia's welfare was in the balance.

A very remarkable man was Peter the Great—a queer combination of autocrat and democrat, as austere as a monk when Duty called and as self-indulgent as Bacchus when Pleasure beckoned.

Peter was born in Moscow in 1672. At his election to the throne, ten years later, he saw one of his uncles dragged from the palace and butchered by a savage mob, and his mother's beloved mentor and his own best friend (who had probably given him his thirst for knowledge) torn from his restraining grasp and hacked to pieces. As a youth he cared little who ruled his empire, so long as he was left undisturbed in his pastime of shipbuilding, sailing, drilling, and fighting sham battles.

A disastrous campaign against the Turks and an attempt to capture Azov, which failed, simply aroused the latent forces in the great ruler, and he immediately sent to Austria and Prussia for sappers, miners, engineers, and carpenters, whom he took with him to the forests of the Don, where they constructed scores of vessels for his "sea caravan," with which he proposed to drive out the Turks from Azov. He himself lived in a hut in the woods and worked like a slave during this time, and when his galley flotilla started it was under the command of "Captain Peter Aleksyeevich" in the galley *Principium*, which he had built with his own hands. His expedition was successful—Azov was captured.

But after his victory Peter foresaw that he could not stand out single-handed against the Turks permanently; so he sent a deputation of nearly three hundred persons, including nobles, generals, merchants, and interpreters, to western Europe to ask support for his cause. He himself accompanied the embassy incognito; but soon, becoming impatient with the progress such a large party could make, he abandoned it and traveled alone, visiting Germany, Holland, England, France, and Austria.

Wherever he went he was indefatigable in learning new arts and gathering new ideas. In the factories he worked unknown with his own hands until they became hard and callous—in gun-mak-

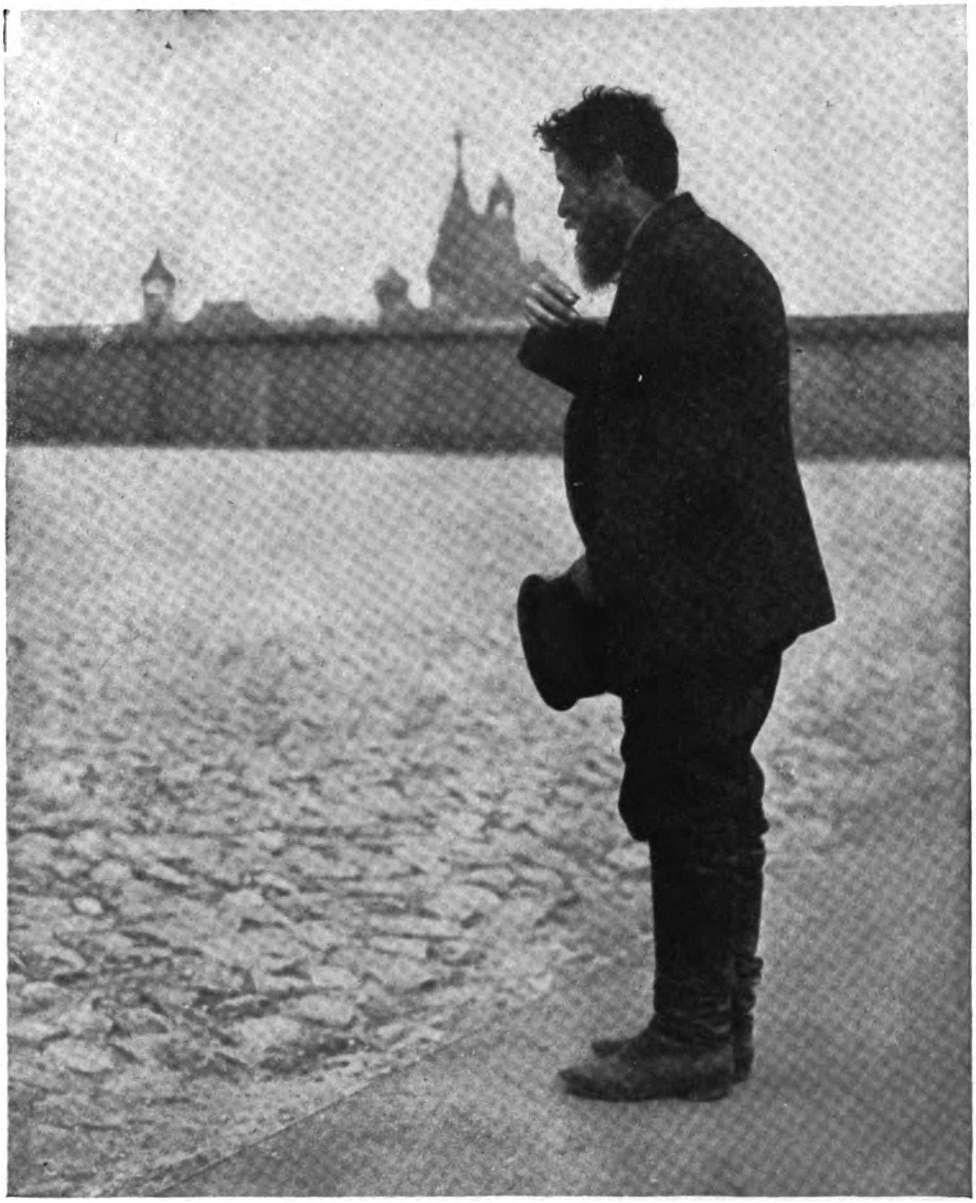


Photo by Gilbert H. Grosvenor

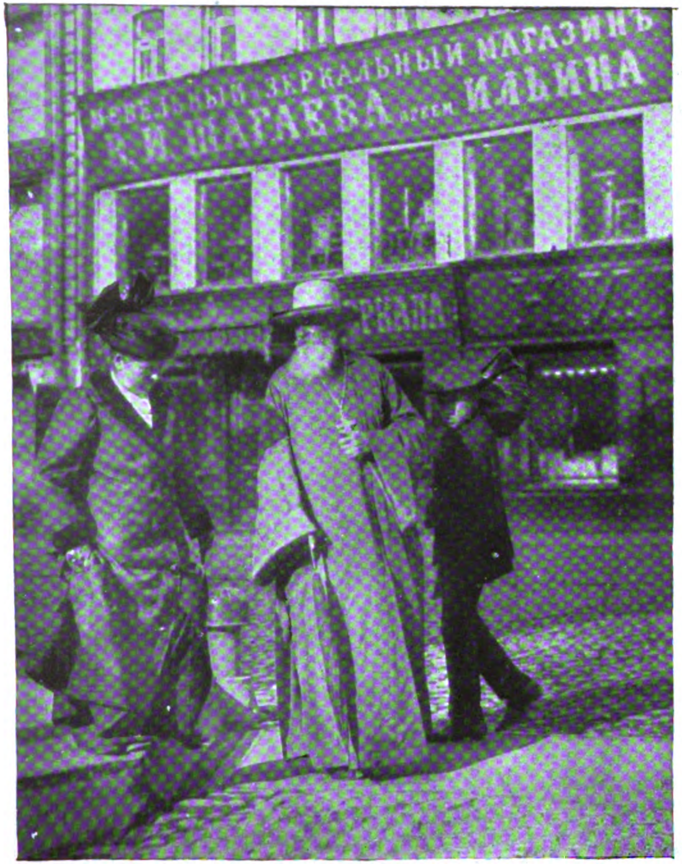
A VERY COMMON SIGHT IN RUSSIA: A DEVOUT RUSSIAN STOPPING TO CROSS HIMSELF AS HE PASSES A SHRINE

ing at Konigsberg, at shipbuilding in Holland, at manufacturing in general in England, and as an engraver in Amsterdam.

PETER'S VISIT TO LONDON

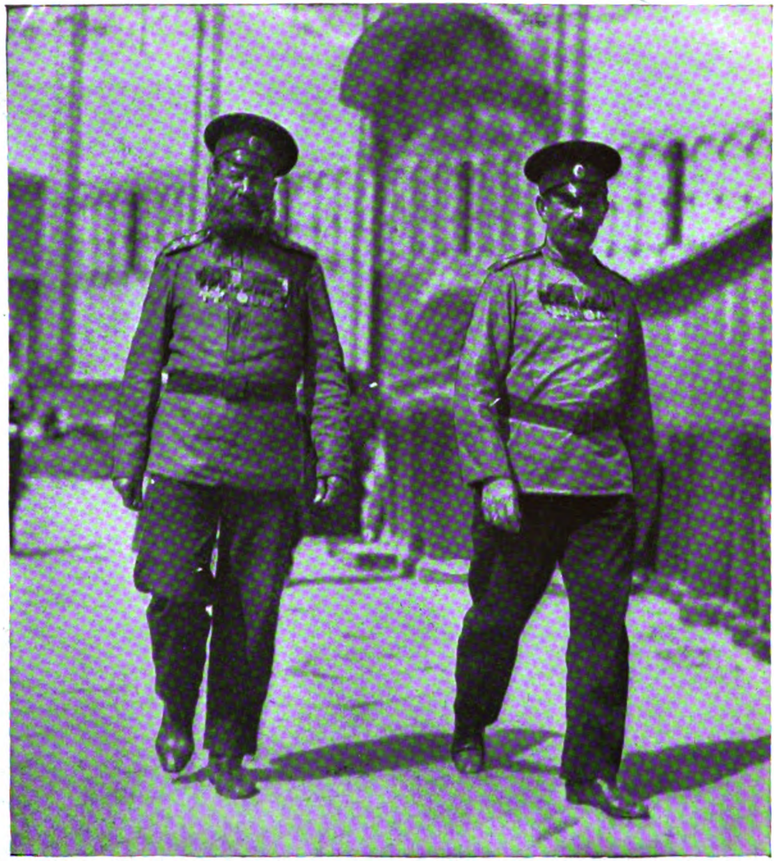
The following story is told of Peter's visit to London:

"When the Tsar visited London, in 1698, he was much gazed at by the populace, and on one occasion was upset by a porter who pushed against him with his load. 'Lord Carmarthen, who was in attendance, fearing there would be a pugilistic encounter, turned angrily to the man and said, 'Don't you know this is



A PRIEST AND HIS WIFE: MOSCOW

The Russian clergy are divided into two classes—the black priests and the white priests. The white clergy are the parochial priests and are allowed to marry—in fact, must marry—but only once, while the black clergy live in monasteries and are celibates.



Photos by Gilbert H. Grosvenor

TWO GUARDIANS OF THE KREMLIN. MOSCOW

All government officials, high and low, all school teachers, professors in universities, postmasters, etc., wear uniforms; in fact, it is calculated that one Russian in ten wears a uniform his whole life long.

the Tsar?' 'Tsar!' replied the man, with his tongue in his cheek; 'we are all Tsars here.' "*

Peter was starting from Vienna to Venice to learn the art of navigation more thoroughly when he was recalled to Moscow to put down an incipient revolution. He "had 2,000 hanged or broken on the wheel and 5,000 beheaded." Then he took up his work of establishing reforms, "the knout and the axe being the accompaniment of every reforming edict."

In these reforms he followed the ideal of the modern Japanese, showing no sentimental predilection for any one country, but borrowing with impartiality the best that each had to offer. Some of the things that worked well with the people of Western Europe were unsuited to Russia; but Peter made the man to fit the coat and not the coat to fit the man.

One of his first orders was that the beards of Russian officials should go; and, although the masses would have thought beheading little more shocking to their ideals, the beards went, as evidence that the old order was changing. Men were ordered to change their dress, women to discard their veils, and intimately personal affairs were reformed as well as public matters. The power of the clergy, who had constantly opposed his plans, was broken by the replacing of the patriarchate with a synod whose members were absolutely dependent upon the Tsar. He founded schools, built up a powerful army, and had the virtue of economy.

Peter foresaw the future of Siberia and of the great Amur River Valley and sought to develop both. He wanted a palace from whose window he could look out upon Europe, and he got it by building a city in a vast marsh. Forty thousand men were drafted annually to get logs from the forests and drive them as piling to make a foundation for his capital. Imagination staggers when trying to comprehend the vastness of the undertaking; but Petrograd stands as the twentieth-century fulfillment of his ideals in city-building.

At the age of 53 Peter sacrificed his life to save a peasant woman and her child from drowning (see page 485).

NAPOLEON IN MOSCOW

The taking of Moscow by Napoleon, its subsequent destruction, and the retreat of his army constitute one of the most thrilling pages in the annals of war. It was on the 14th of September, 1812, that the golden minarets and starry domes of the great city first met the gaze of the French army. "All this is yours," exclaimed the great chieftain, and a mighty shout swept over his army from front rank to rear guard, like a great billow over a sea.

The day before the Russians had evacuated the city and the way of the French was unopposed. But when they arrived they were chagrined to find that the 300,000 inhabitants had left, and that only the liberated prisoners, the rabble, and the feeble had remained behind. Napoleon himself occupied the Kremlin on the 15th, and that very night, while he was waiting to receive a deputation of notables, who sent in their stead a deputation of rich *raskolnik* merchants (as dissenters from the Greek Catholic Church are called), fires were lit in all parts of the city by Russians chosen for the work. Fanned by a high wind, the flames quickly spread into a great conflagration. The hospitals, containing 20,000 wounded, soon fell prey to the fire, and the spectacle was one of infinite horror.

After the fire came the orgy of pillage. Soldiers, sutlers, galley slaves, and

---

* This was ten years after the peaceful revolution in England. Already the main principles of English government, Macaulay says, "had been engraven on the hearts of Englishmen during 400 years. That, without the consent of the representatives of the nation, no legislative act could be passed, no tax imposed, no regular soldiery kept up; that no man could be imprisoned, even for a day, by the arbitrary will of the sovereign; that no tool of power could plead the royal command as a justification for violating any right of the humblest subject, were held, both by Whigs and Tories, to be fundamental laws of the realm."

These words of the brilliant historian make us realize the political backwardness of Russia, and of every other continental power of Europe at that time, as compared with England.

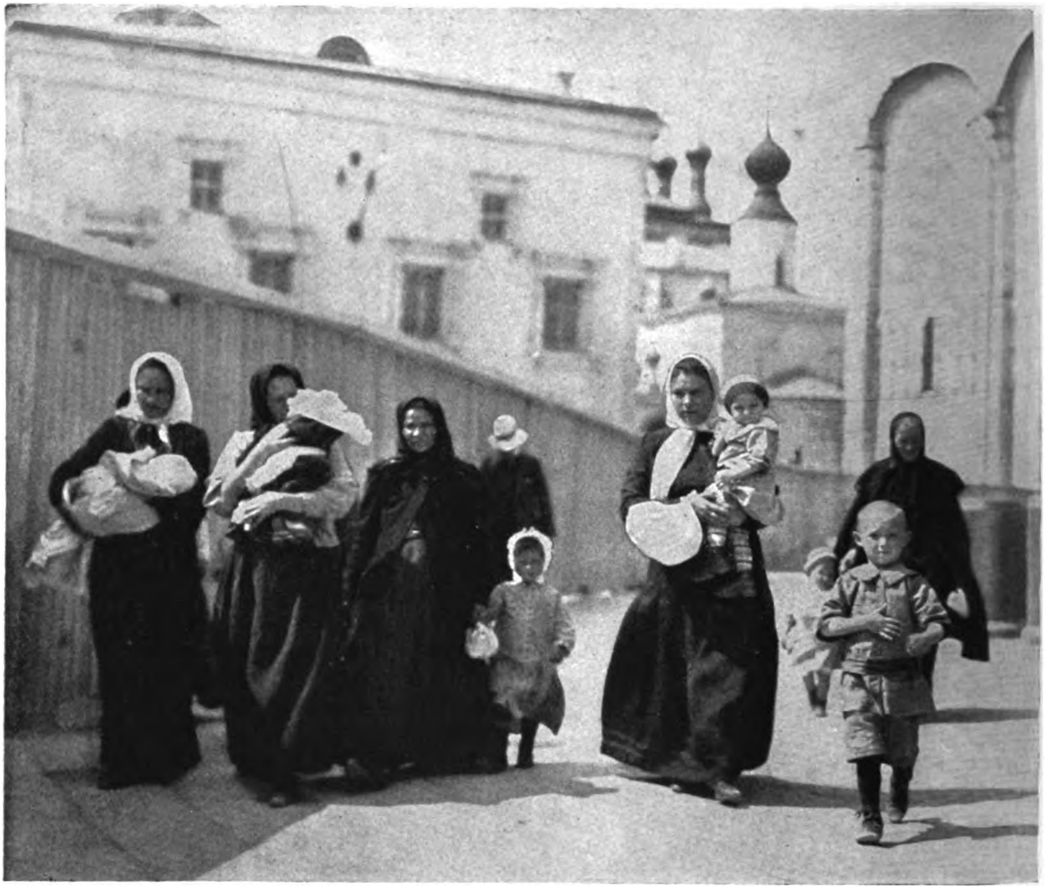


Photo by Gilbert H. Grosvenor

RUSSIAN MOTHERS MAKING THE ROUND OF THE HOLY PLACES IN THE KREMLIN

They will press baby's lips to the sacred icons and relics regardless of how many have preceded them. Some of the bones are black with age, and the millions of caresses have formed a brown crust over some of the holy pictures.

prostitutes, unmindful of the horrible sufferings of those who had been burned, but in whose bodies yet remained the spark of life, began to ply their nefarious trade. Some clothed themselves in the richest of silks and the finest of furs. Even the galley slaves concealed their rags under the most splendid court dresses. Cellars were broken open, and a saturnalia of drunkenness added to the horrors.

"Palaces and temples," writes Karamzin, "monuments of art and miracles of luxury, the remains of past ages and those which had been the creation of yesterday, the tombs of ancestors and the nursery cradles of the present generation, were indiscriminately destroyed; nothing was left of Moscow save the remembrance of the city and the deep resolution to avenge its fate."

THEY DIED LIKE FLIES ON THE COMING OF WINTER

The Russians flatly refused to consider peace proposals at such a juncture, and declared that there was no use to suggest an armistice, for the Russian army was at that moment preparing to resume the offensive.

For a month the Great Corsican lingered amid the cinders of the city, but on the 19th of October he left, with his 120,000 men, a vast amount of plunder, and a great horde of camp followers. He was barely well under way when a

LITTLE RUSSIANS IN MOSCOW Photo by Gilbert H. Grosvenor

The Russians have never believed in corporal punishment or laying violent hands on a child, and in this respect are generations ahead of England or the United States. Punishment of any kind is disapproved as likely to break a child's spirit and spoil his character.

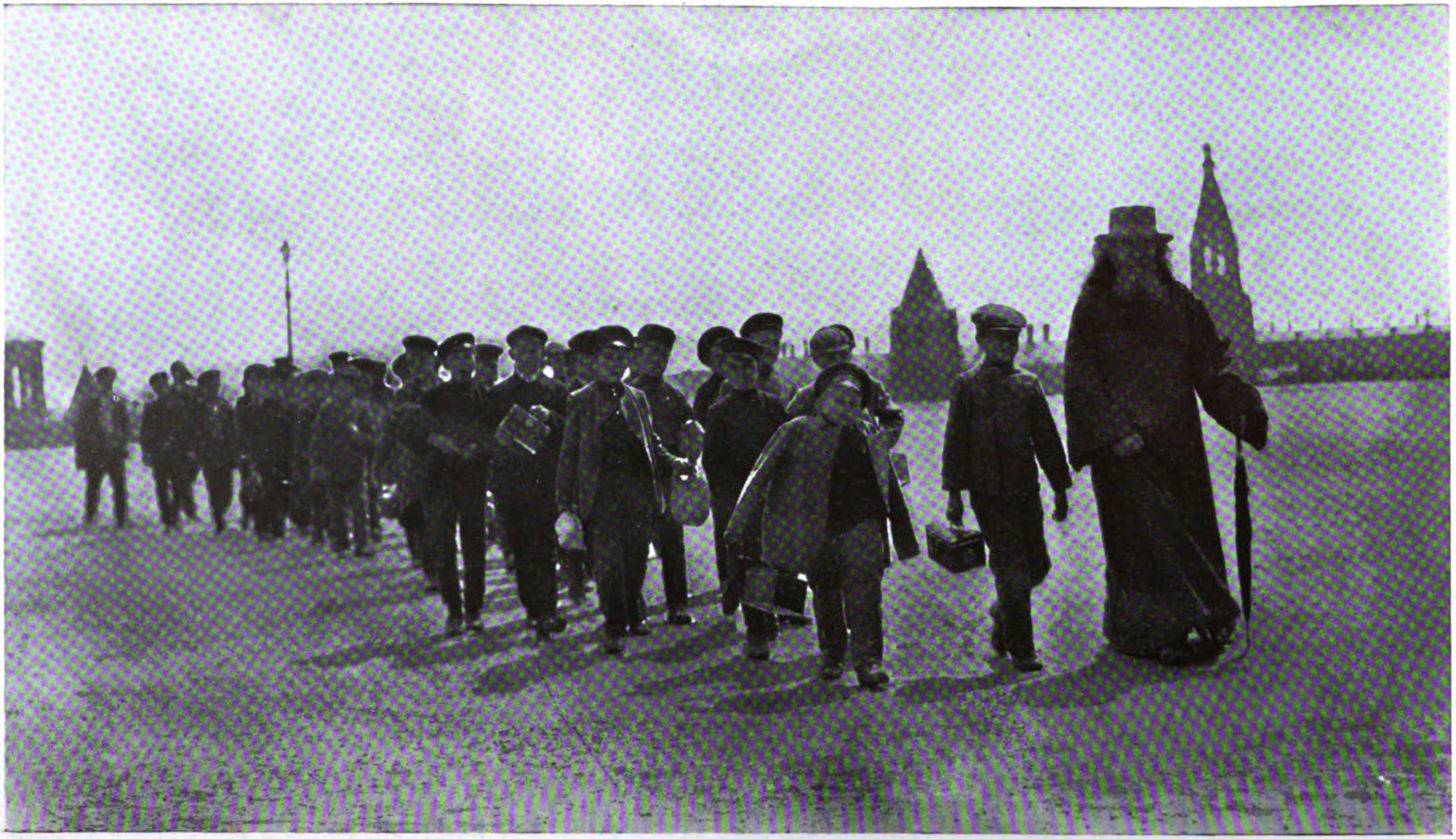
winter of unusual severity set in. The thermometer dropped to 18 degrees, the wind blew furiously, and a driving, blinding snow made the march a discipline-breaking, heart-rending ordeal. Many fell by the wayside and found a snowy grave; others crawled on, with nothing to eat or to drink, frost-bitten and groaning with pain.

Discipline disappeared completely; no soldier obeyed his officer. Disbanded, the troops spread themselves right and left in search of food, and, as the horses fell one by one, they fought over the mangled carcasses and devoured them raw. Many remained by the bivouac fires, allowing the insensibility of cold to creep over them and usher them into that long bivouac that knows no waking until the roll is called beyond the river. They died like flies on the coming of winter, and when Napoleon crossed the Berezina the wretched remnant of his once-powerful army was nearly annihilated. A Russian account says that 36,000 bodies were found in that river alone.

Of the half a million men with whom Napoleon had gone forward to break the Russian power, 125,000 were slain in battle, 132,000 died from fatigue, hunger, and cold, and 193,000 were taken prisoners. Only about 40,000 escaped the general wreck, which was the greatest military catastrophe of history or tradition.

FREEING THE SERFS

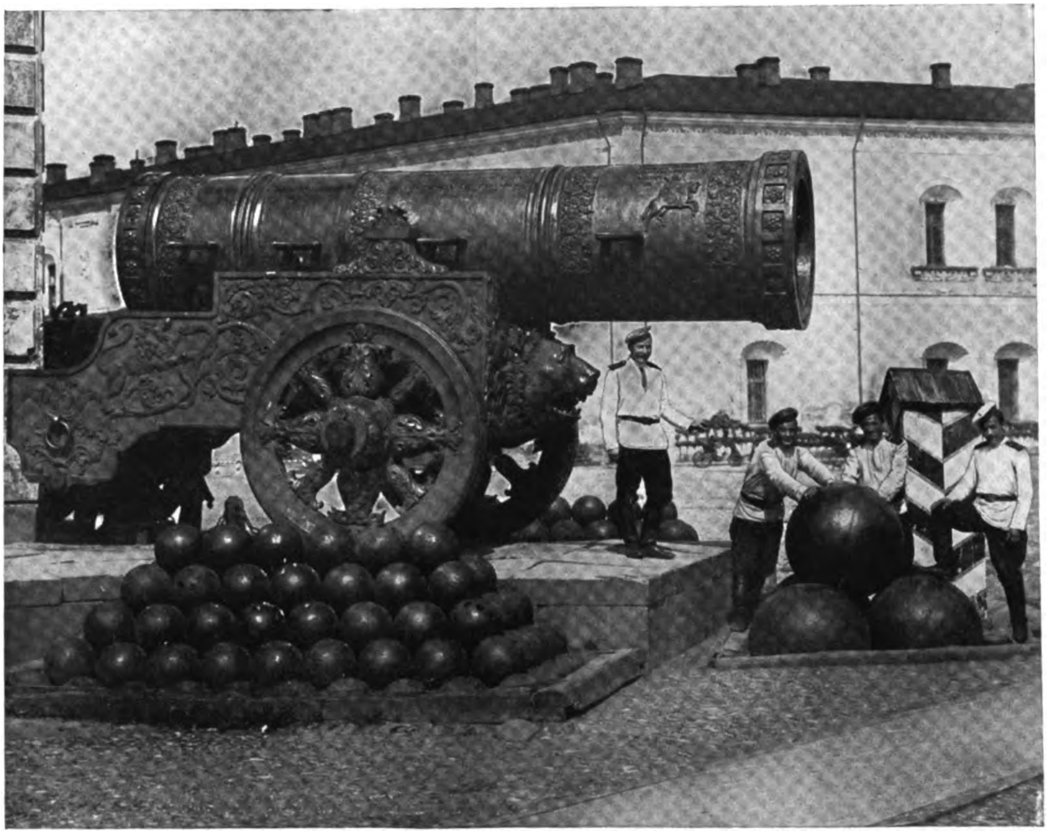
Perhaps the greatest single act of any ruler in all history was that of Tsar Alexander II in freeing the 50 million serfs of Russia in 1861. Not only did he release more than half the people of his empire from bondage, but he also bought 350 million acres of land from the land-owners and turned it over to the villages, to be held as communal property



SCHOOLBOYS AND PRIEST: MOSCOW

Photo by Gilbert H. Grosvenor

Many of the people met in Russia objected to the kodak, thinking it had detective purposes, but the kindly old priest in this picture, who was teaching his boys Russian history by showing them the historic places and souvenirs of the Kremlin, when he saw that we were anxious to obtain a photograph of his party, without a word or any hint from us voluntarily lined the boys up against a wall and bade them keep motionless until the camera had clicked. However, the photograph obtained before his assistance was given proved more effective.



THE GREAT CANNON: KREMLIN, MOSCOW

The Tsar's cannon, or the king of cannons, weighs a little more than forty tons, and is seventeen and two-thirds feet in length. It was long considered the largest cannon in the world, and has never been fired. Probably heavier cannon than this are being fired this very day in the European war.

and to be paid for by the villages in instalments running 50 years.

This act of Alexander, taken so shortly before Lincoln's Emancipation Proclamation, makes our freeing of the negro look small in comparison. Alexander's ukase affected 50 million bondmen, nearly as many persons as are now living in the 12 most populous States of the Union, as follows: New York, Pennsylvania, Illinois, Ohio, Texas, Massachusetts, Missouri, Michigan, Indiana, Georgia, New Jersey, and California. Lincoln's proclamation affected less than four million; Alexander's ukase affected more than half of his country's population; Lincoln's proclamation directly touched less than an eighth of our population.

While this achievement in agrarian reform helped the serfs a good deal, it did not accomplish all they had expected; indeed, it fell far short of the relief they desired.

The peasants could not understand why it was that, having been born on the land, having tilled it from time immemorial, and having been its caretakers and the source of its value for centuries, they should be forced to pay for it. Many of their villages long groaned under the burden of paying for the communal property thus transferred to them at prices they had no part in fixing.

The ukase freeing the serfs gave them a communal form of government for their villages. They had had their legislative assemblies from immemorial antiquity, but it was not until the act of emancipation that the village community was withdrawn from the patrimonial jurisdiction

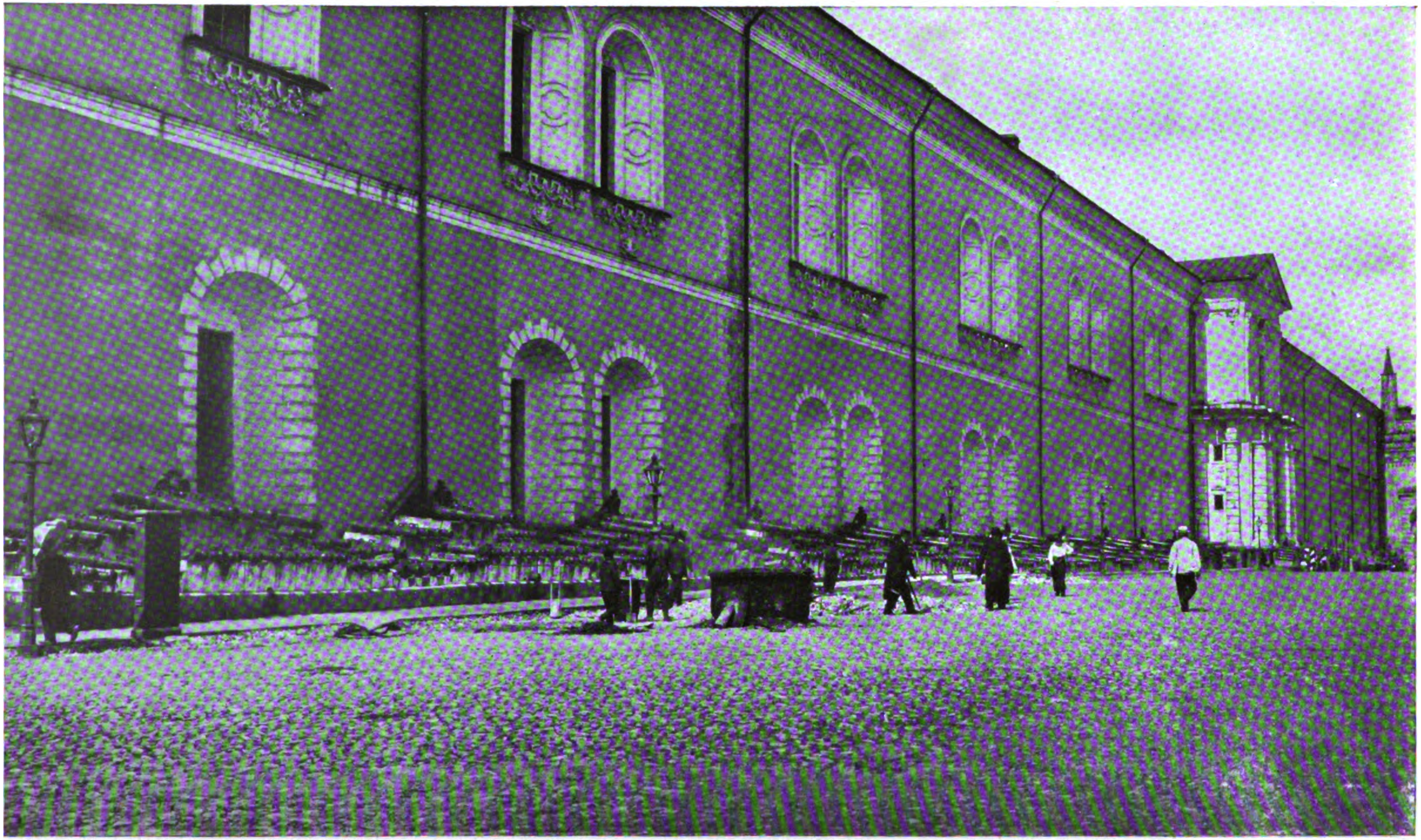


Photo by Gilbert H. Grosvenor

THE MOST IMPRESSIVE MONUMENT IN RUSSIA TO THE DEFEAT OF NAPOLEON: A ROW OF 895 CANNON CAPTURED FROM HIS ARMY DURING RETREAT

Almost every gun bears the initial "N" surrounded by a laurel wreath. At least twenty thousand horses were required to drag these guns and the ammunition for them

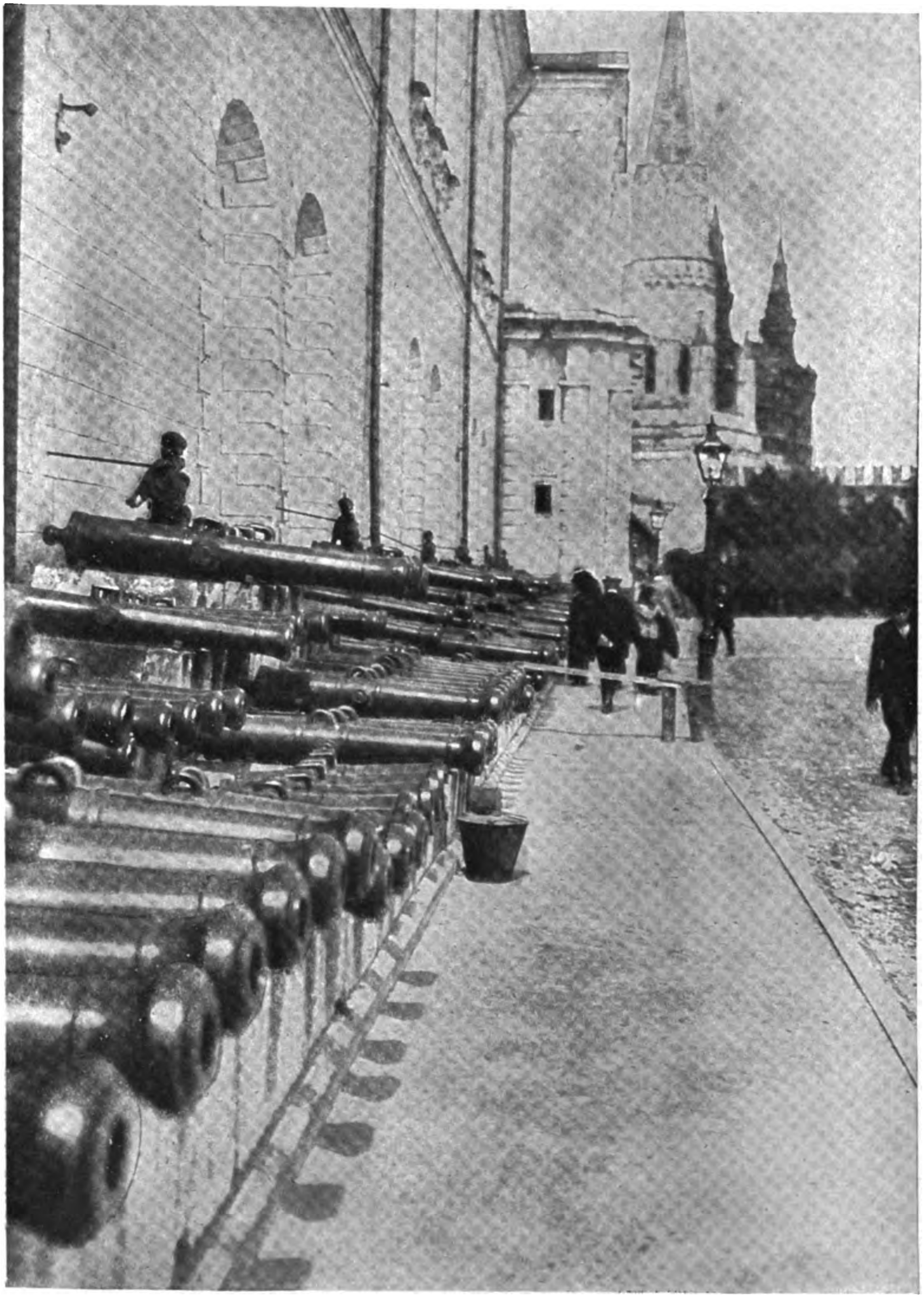


Photo by Gilbert H. Grosvenor

ANOTHER VIEW OF THE LONG LINE OF GUNS CAPTURED FROM NAPOLEON

Moscow represented to the Russians everything dearest in their national, religious, and commercial life, and yet all Russians—priests, merchants, peasants, and soldiers—joined to sacrifice it when Napoleon's invasion threatened to reduce Russia to subjection. Napoleon had counted on the city's rich stores of grain and furs and on the thousands of horses there to replenish his army and to afford comfortable quarters during the winter, but the Russians preferred to starve and freeze through a Russian winter if that was the only way to beat Napoleon (see page 445).

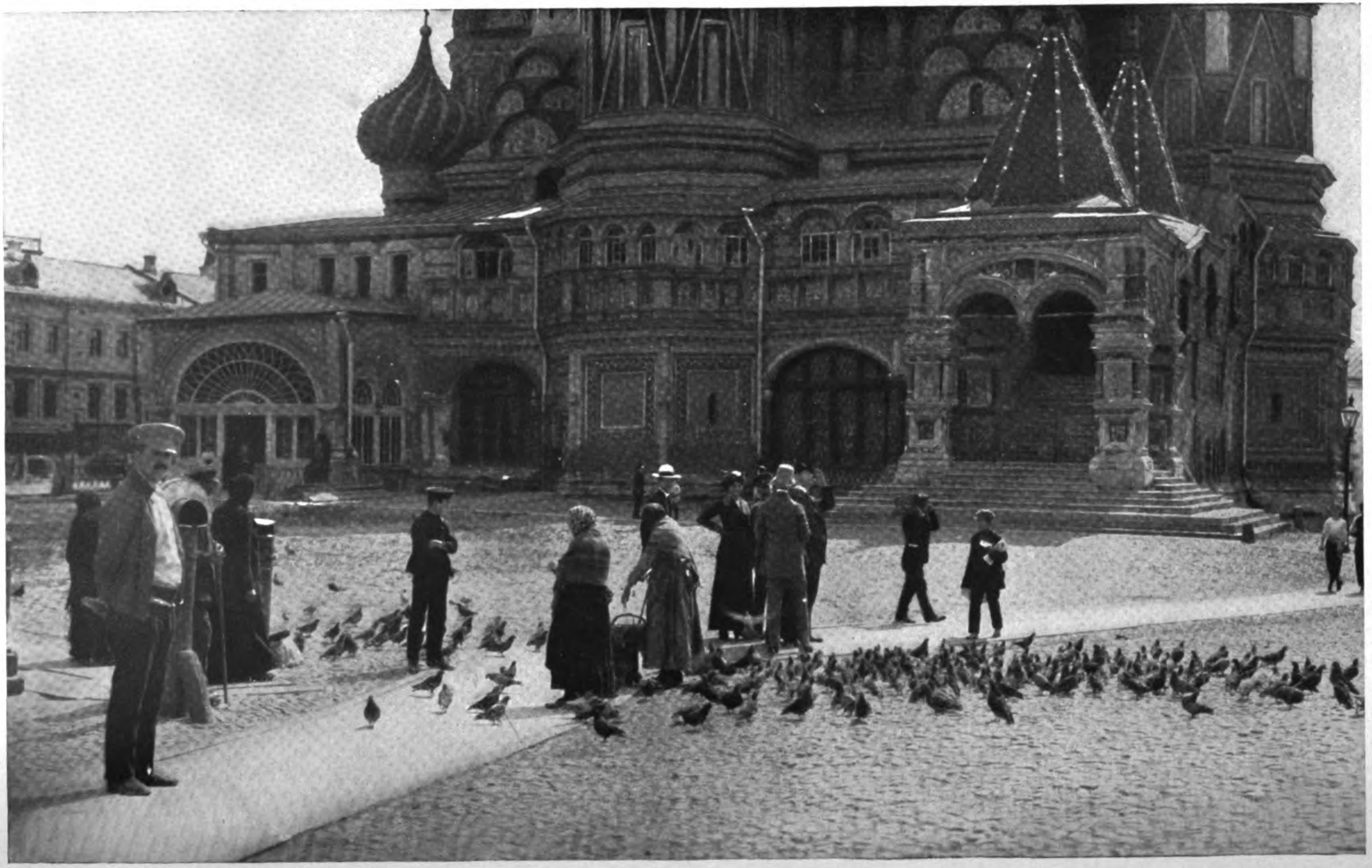


Photo by Gilbert H. Grosvenor

FEEDING THE PIGEONS IN THE GREAT RED SQUARE: IN FRONT OF BASIL'S CATHEDRAL (SEE PAGE 493)

The square was the scene of public executions when the Tsars reigned from Moscow. Another view of this square is given on page 432 of the land-owning nobility and endowed with self-government. Each village is a miniature pure democracy, where even representative government would be regarded as too remote. The heads of the houses in a village meet in free consultation on the basis of "one man, one vote." This true democracy, within an autocratic monarchy, divides the lands to be cultivated, disciplines its members, provides relief for the needy, and buys fire-engines and agricultural machinery. It selects a head man, who is the president of all village meetings. Another official selected is the pole man, who goes through the village tapping on the windows to warn the people that a village meeting is about to be held.

Nothing is done until the villagers in meeting approve it. For instance, no one can begin to mow hay until the village meeting says so. The village lands are apportioned out, each male member of a family getting a strip; and these are not located together, thus preventing any family from getting more than its share of the best land. Sometimes there is a redivision every ten years, and sometimes oftener. Sometimes strips are 10 feet wide and sometimes 200—a strange effect in harvest time, when the land looks like a piece of grandmother's home-made rag carpet. Hay is usually made by the whole community and divided into a number of piles corresponding to the number of men, and these are assigned by lot.

A RURAL-LIVING PEOPLE

Few nations have such a great percentage of their population living on the soil and by the soil as Russia. Where England and Wales have 78 per cent of their people living amid urban surroundings, the United States 47 per cent, Germany 43 per cent, and France 42 per cent, only 15 per cent of Russia's people have left the soil. Of the typical thousand of population, 771 are peasants, 107 are burgesses, 66 are natives of the wild-tribe order, 23 are Cossacks, 15 are nobles, 5 belong to the clergy, 5 are privileged burgesses, and 8 are unclassified.

Being preëminently a land of agriculturists, lands are in Russia what stocks and bonds are in England—the principal field for investment. The great Black Forest region is one of the most fertile on the face of the earth; its soil is from 3 to 10 feet deep, and its agricultural possibilities match anything that may be found in Iowa or the Dakotas.

Thus the geographical handicap of early years—that wide, flat plain over which the armed hosts could drive without hindrance, burning and butchering—is now Russia's greatest asset.

With the bulk of its crops raised by the peasantry, employing the most primitive means of farming, Russia is still able to produce a very large proportion of the world's food supply. In 1913 it gave to civilization nearly a fourth of its wheat, fully a fourth of its oats, a third of its barley, and more than half of its rye. The Empire in that year had a wheat crop 200 million bushels greater than that of the United States, an oats crop offsetting our own, a barley crop three times as great as ours, and a rye crop 25 times the size of ours.

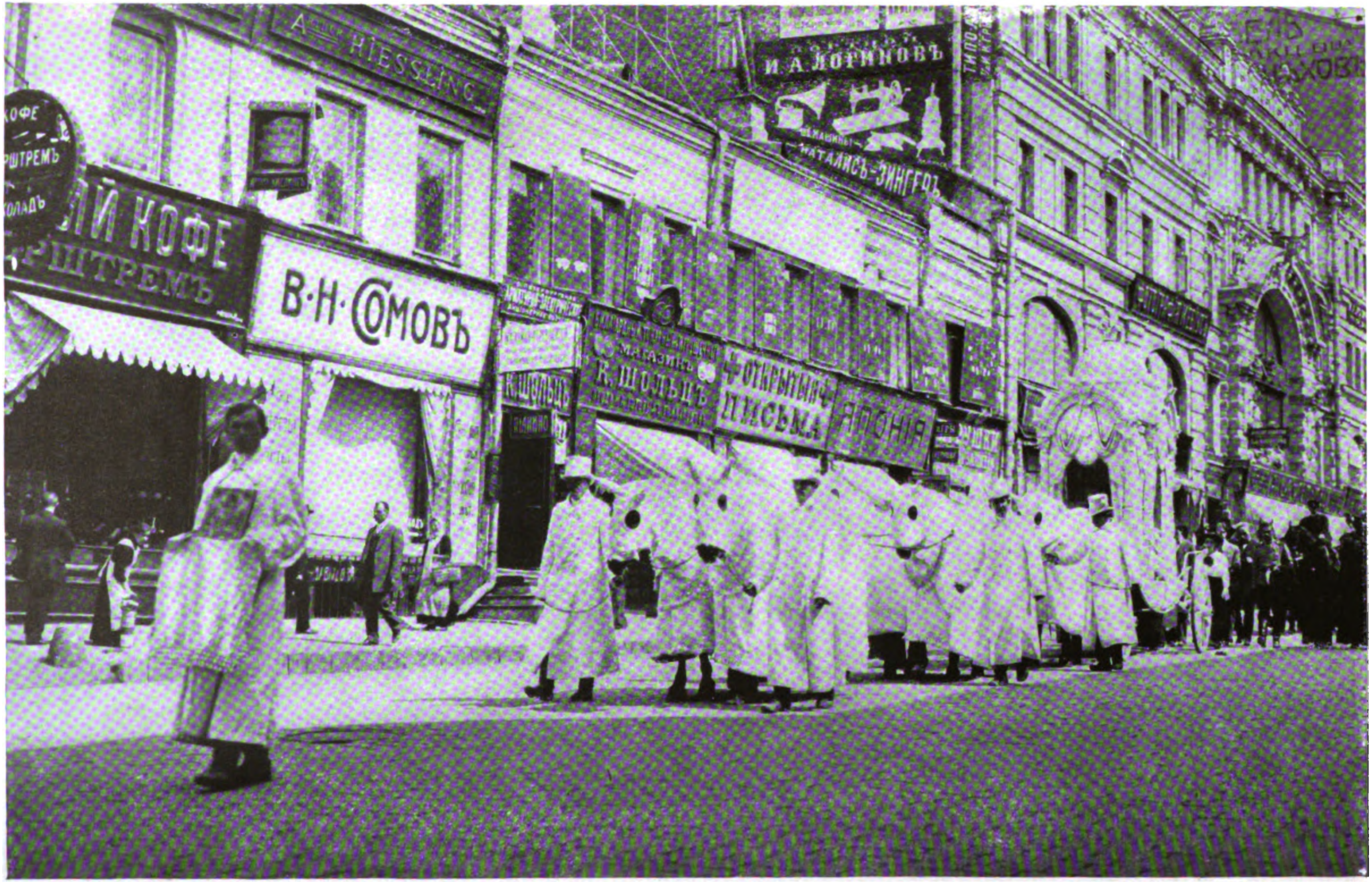
But for our tremendous crop of corn, approximating 2½ billion bushels, the United States would have to yield first place to Russia as a grain producer.

FUTURE POSSIBILITIES

But what Russia is as a producer of the world's staple foodstuffs is nothing as compared with what it may be. That the acreage can be enormously increased, any one who has traveled through Russia can very well understand. But let us assume that the acreage will stand still, and that at some future date the Russian farmer, with his naturally rich and comparatively new land, can duplicate what the German farmer, with his naturally poor and long-used land, is now doing in the matter of per-acre yield.

Russia then would be able to give the world three-eighths of its present wheat supply, two-thirds of its present oats crop, five-sixths of its present barley harvest, and nearly half a billion bushels more than its present yield of rye.

As a stock-raising country Russia stands out as having more horses than any other nation on earth, with the United States as its nearest rival. It has



A POOR MAN'S FUNERAL PROCESSION IN MOSCOW

Photo by Gilbert H. Grosvenor

Russia is noted as a land of elaborate funerals. This picture shows a procession at the funeral of a poor person, and many a poor family almost bankrupts itself in order to give a proper outward show of its sorrow. All the mourners walk, although several carriages may follow with no one riding in them. The funeral car usually is drawn by six mantled horses, each led by a groomsman in white uniform. The services at the church are long and impressive.

WORKMEN IN THE KREMLIN: MOSCOW Photo by Gilbert H. Grosvenor

Big and sturdy, they are swinging along with the easy and springing step characteristic of the powerful Russian race

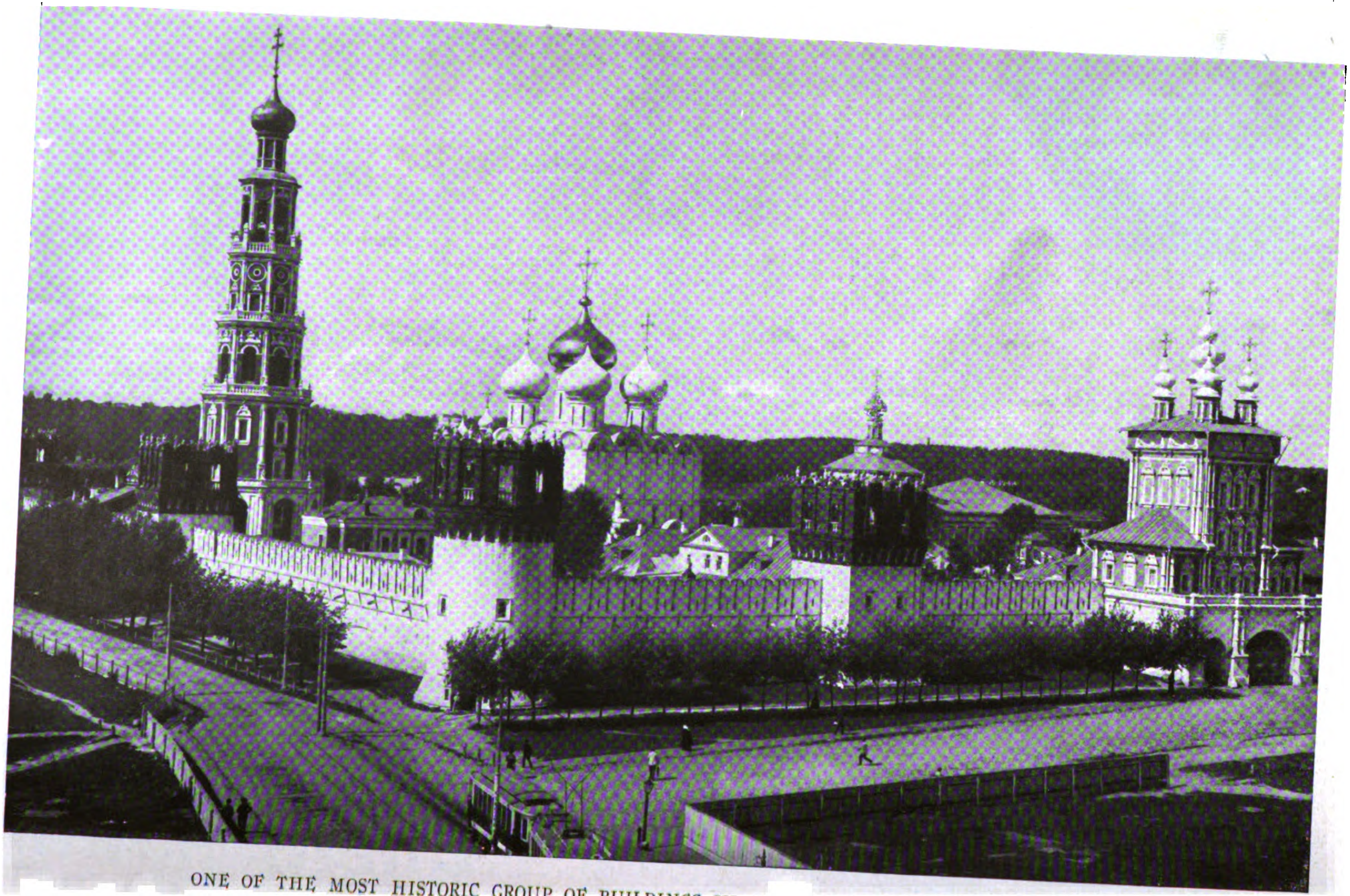
35 million as compared with our 24 million; it has 80 million sheep as compared with our 50 million, and 51 million cattle as compared with our 59 million. With the government spending money with lavish hand to bring into Russia the best blood that is to be found in the stock of Europe and America, the result is showing in its horses, its cattle, and its sheep.

EDUCATIONAL CONDITIONS

Russia has the largest proportion of illiterates of any civilized country, although in recent years conditions have been improving. The latest authoritative information, that for 1908, shows that out of every 1,000 of population only 211 can read and write. How much progress has been made, however, in the work of introducing general education is revealed by the fact that the census of the early nineties showed that only 50 out of every 1,000 were literates.

Illiteracy is much more common among the women than among the men. In Russia as a whole there are 22 men who can read and write for every 10 women who are able to do so. In Siberia there are 38 literate males for every 10 literate females.

Some idea of the interest of the people at large in education is revealed by a comparison of school populations in Russia and the United States. With a population of 100 million, the total enrolment in the public and private schools of the United States in 1912 amounted to 19,218,000. With a population of 172 million, the total enrollment in all the



ONE OF THE MOST HISTORIC GROUP OF BUILDINGS IN MOSCOW: CONVENT NOVO-DEVITSCHY

Within the shelter of the massive walls of this convent more than one of the royal widows, sisters, or daughters have taken refuge. Here was imprisoned the ambitious and gifted sister of Peter the Great, Sophia, who ruled when he was a boy, and who did her best, according to Peter, to put him out of the way, so that she might become permanent Empress. In front of the Russian monasteries and convents there is usually a little sentry box, where a nun or priest is always present to receive the copper which the passing peasant may volunteer.

Photos by Gilbert H. Grosvenor

A PEDDLER OF PICTURES OF THE RUSSIAN SAINTS (SEE PAGE 461)

A NUN IN MOSCOW

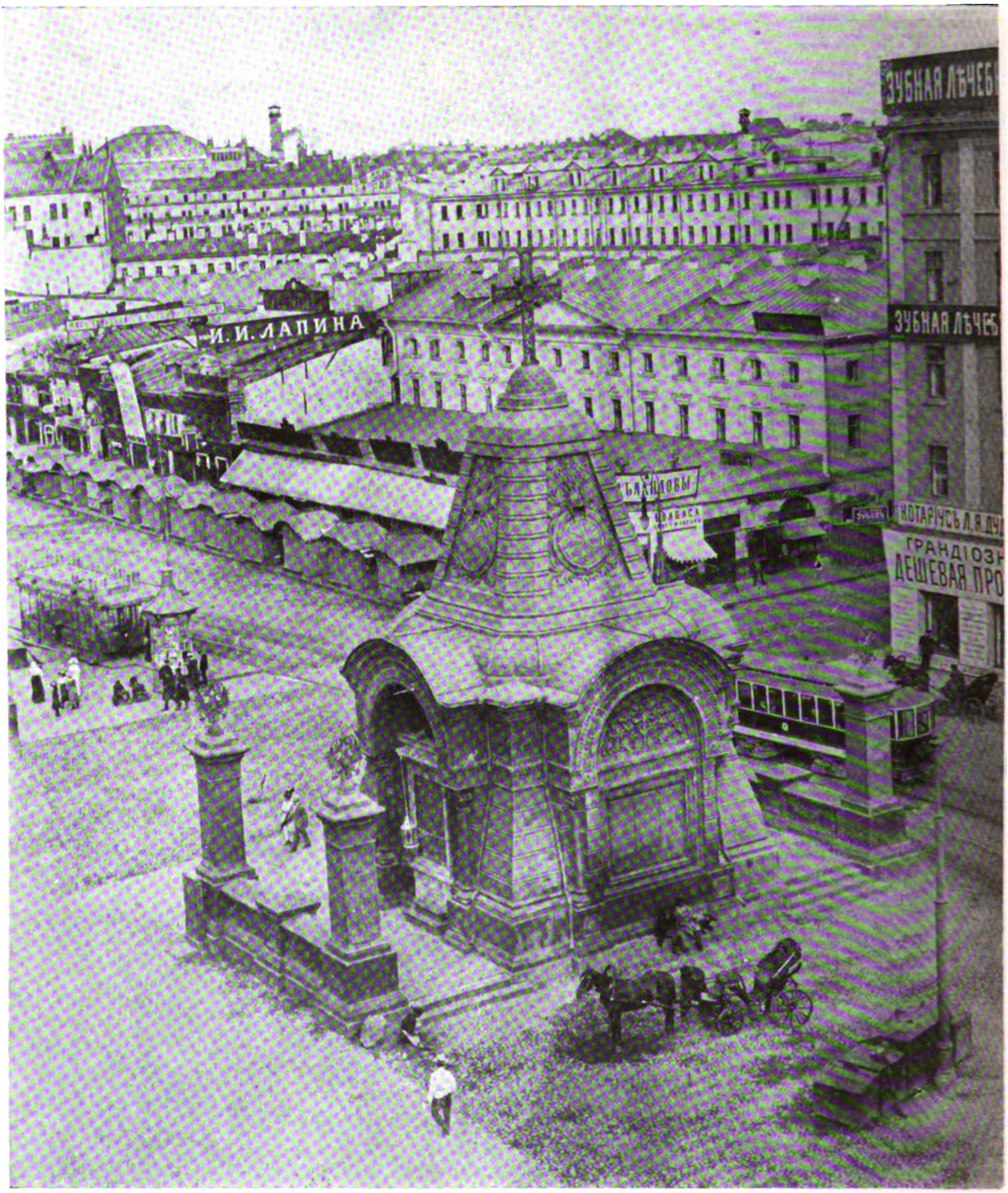


Photo by Gilbert H. Grosvenor

ONE OF THE MODERN SHRINES IN THE CITY OF MOSCOW

It is situated in a public square in the business section of the city. The little houses on the left are market stalls. The electric car was made in the United States. The routes of the electric cars in Moscow are indicated by large numerals carried conspicuously in front of the car, making it easy for the traveler to find his way about the city. Note the double-headed eagle on the columns in front of the shrine. Ever since the Prince of Moscow, Ivan III, married the heiress of the last Constantine, the Russian royal house has used the double-headed eagle, which for one thousand years had been the emblem of the Byzantine Empire, and Russians have dreamed of becoming the heirs to Constantinople (see page 428).

Photo by Gilbert H. Grosvenor

TWO SCHOOLBOYS HAVE STAYED BEHIND TO HAVE A PLAYFUL SCRAP, WHILE THEIR COMRADES HAVE CROWDED INTO THE CATHEDRAL

Russian boys and girls do not play as children do in western countries. The athletic games and toys and uproarious laughter of our young people are generally unknown in Russia

schools in Russia, including public and private, primary and higher schools, was 7,970,000, and there were 23 males for every 10 females in this enrollment.

A law was passed several years ago making general education compulsory, but the growth of the village schools notwithstanding has been much slower than its proponents had hoped to witness.

THE POSITION OF WOMAN

Although women in general have received such little attention educationally, Russia lives up well to its reputation as a land of extremes in this regard, for Russia was the first country in Europe to establish a technical school for women. The first woman civil engineer in the world was a Russian, and as far back as 1859 a woman was admitted to the University of Petrogad.

The educated woman in Russia enjoys a position of freedom equal to that of any other country in the world. She is frequently found as owner and manager of large factories and estates; she gets her degrees at the universities along with men; she is given posts as teachers of all kinds, including professorships at men's universities, and she practices medicine and dentistry. There is a marked tendency to encourage her entering the legal profession, and the Constitutional Democrats in the Duma want to admit her to the duties of jury service. When women teachers and professors have served 20

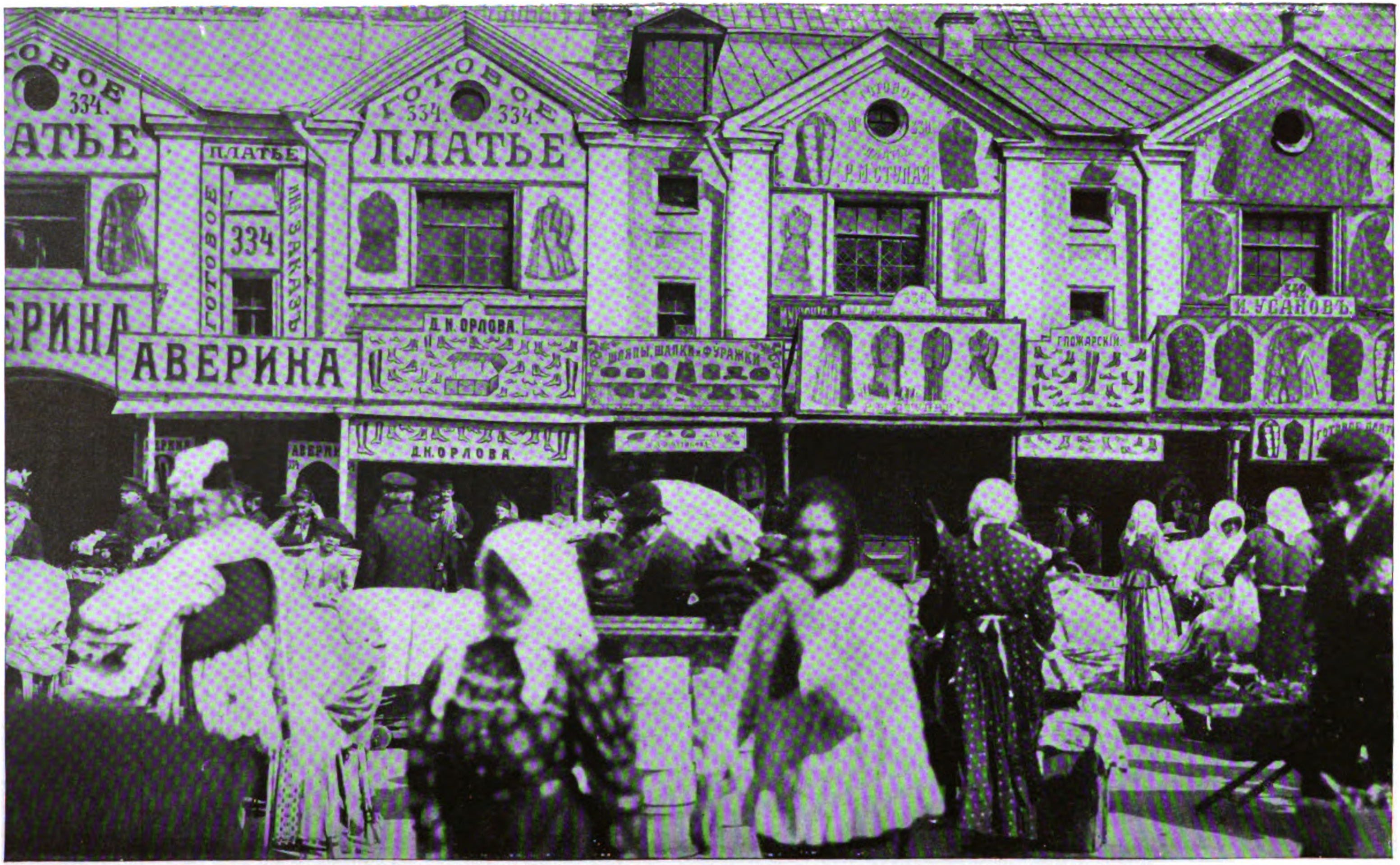

ГОТОВОЕ
334.
ПЛАТЬЕ
ПЛАТЬЕ
ГОТОВОЕ
334
ИЛИ ЗАКАЗЪ
АВЕРИНА
Д. Н. ОРЛОВА.
ШЛЯПЫ, ШАПКИ и ФУРАЖКИ
Г. ПОЖАРСКІЙ
И. УСАНОВЪ
Д. Н. ОРЛОВА

Photo by Gilbert H. Grosvenor

SCENE IN A CLOTH MARKET IN THE JEWS' BAZAAR, SHOWING THE PICTORIAL SIGNS USED BY THE MERCHANTS IN ADVERTISING THEIR WARES

Very few of the people can read and write, and consequently pictures are the usual method of advertising. The letters in the name of a restaurant are written in green and yellow, the top part of the letters being green to represent eating and the lower part yellow to represent drinking.

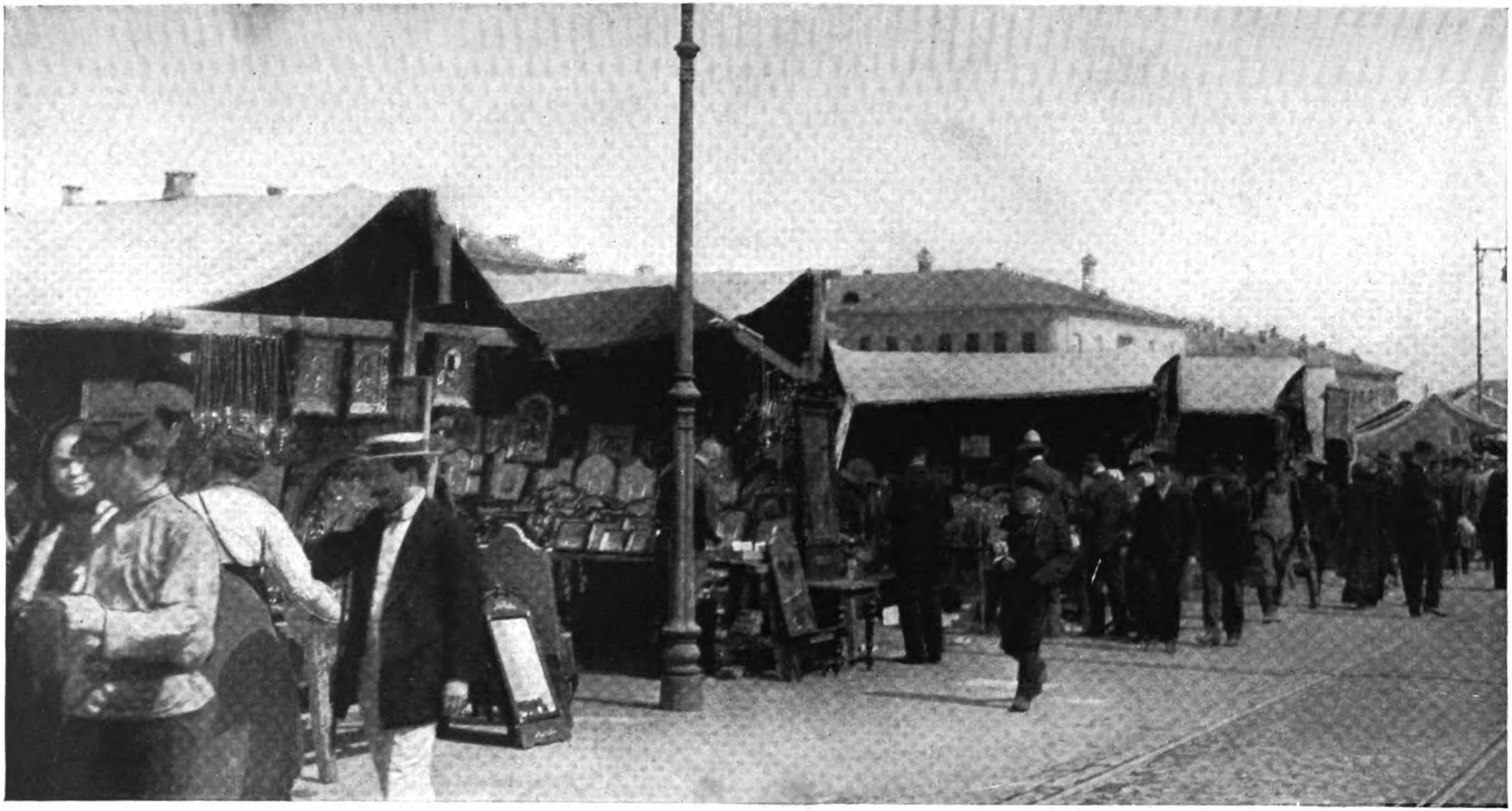


Photo by Gilbert H. Grosvenor

SHOPS FOR THE SALE OF SACRED ICONS—THAT IS, REPRESENTATIONS OF CHRIST, OF ANGELS, AND SAINTS: MOSCOW

The icons are the symbols of the saints and of God. In every Russian home, in every room in your hotel, in the railway waiting-rooms, everywhere there is an icon. It is not proper to sit with one's back to it. It consecrates the home, and is a reminder to the Russian that "God is in the midst"—not locked up in the church, but always present. The representations of Christ, of angels, and of saints are given in relief or mosaic or are painted.

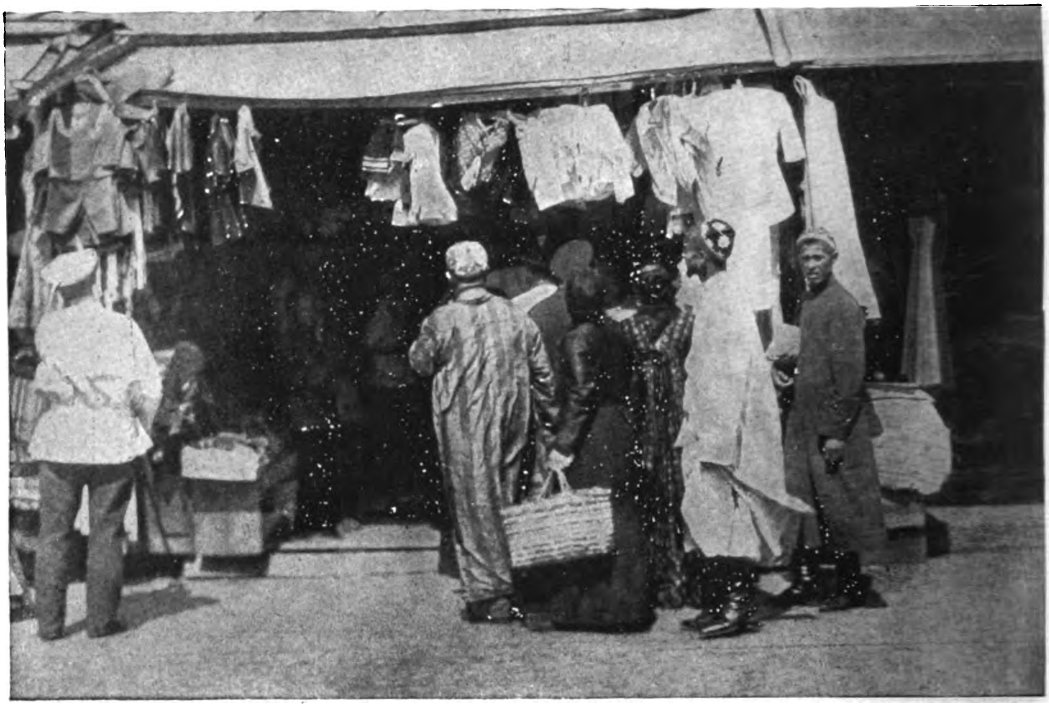
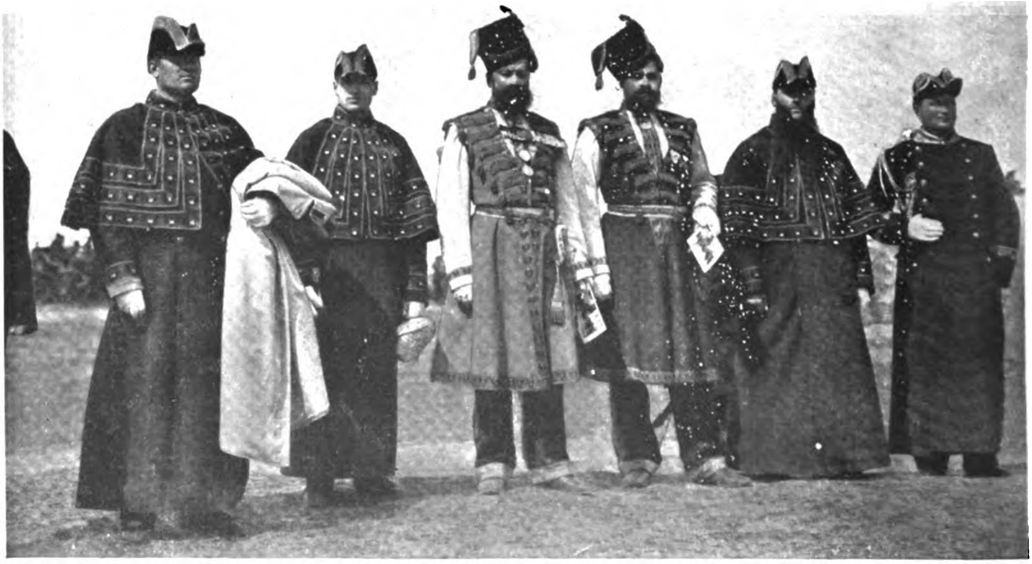


Photo by Gilbert H. Grosvenor

TYPES SEEN IN THE BAZAAR AT MOSCOW

The great variety of the races under the Russian flag is nowhere better illustrated than here. From all parts of Asia have come representatives of the different peoples, each wearing its native costume.



THESE HANDSOMELY GOWNED OFFICIALS ARE ATTENDANTS IN A MUSEUM

One takes your coat, another your hat, and a third your stick or umbrella, and each must be substantially remembered when you leave

Photo by Gilbert H. Grosvenor

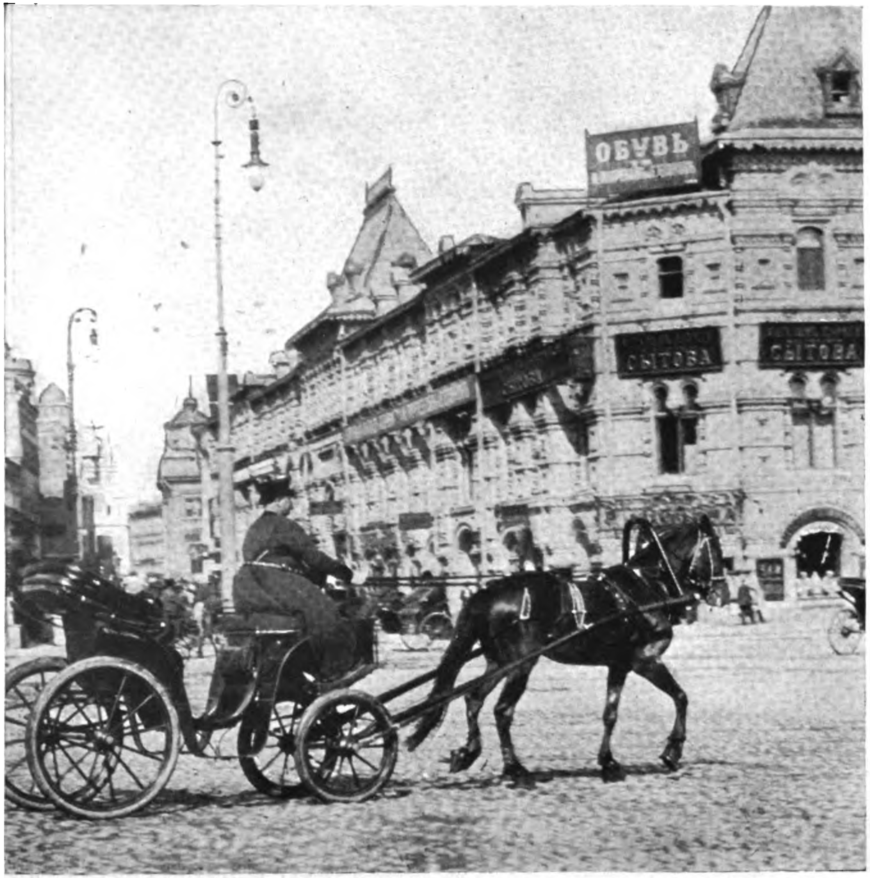
A RUSSIAN PRIEST, WITH HIS WIFE AND TWO CHILDREN, VISITING THE MUSEUM

"The clergy forms a caste apart; priests and deacons marry the daughters of priests and deacons, and it very often happens that an old priest on retiring passes his parish on to his son-in-law. The priest's wife brings with her a tradition of good housekeeping that has been handed down in the families of the clergy from generation to generation, made necessary by the poor salaries paid and the large families to provide for. The children are educated in special schools for the clergy, and if, as sometimes happens, the children do not follow their parent's profession, they often enter the government service as clerks or teachers." See H. W. Williams' admirable book, "Russia of the Russians" (Scribners).

years they are entitled to retire on a government pension, and if they die and are survived by husbands, the pensions continue during their husbands' lives.

There are ten government universities in Russia, the largest that of Petrograd, with 10,364 students. The one at Moscow has 9,000 students, and the one at Kharkov 5,274. A popular university was established in 1909 at Moscow under a fund left by General Shaniavsky.

But with all these universities the average Russian is as illiterate as the statistics cited above show. We had numerous experiences revealing his illiteracy and his indisposition to confess it. On several occasions our guide had told our drosky driver, a different man each time, to take us to a certain store and had given him the street and number. He immediately set off and drove to the street, but continued driving slowly up that thoroughfare, looking back at us occasionally for further directions Finally he reached the end of the street and, to our surprise, turned and slowly retraced the ground traversed, asking us by signs, for we understood no Russian, which store we wished to visit. We finally realized that the drosky driver could not even read figures, the numbers on the doors. It was then that we fully understood the necessity for the pictorial rather than written signs before many of the stores, more especially in the poor sections. These signs show coats, hats, shoes, caps, trousers, sausages, etc. The



Photos by Gilbert H. Grosvenor

A COACHMAN IN MOSCOW

The drosky drivers wear padded coats that look like great wrappers round their bodies. The fatter they are the more prosperous and well-fed they are supposed to be, and consequently the more high-priced. The cab driver takes better care of his horse than he does of himself, and would prefer to go hungry than to have his horse starve. Many of these "hack" horses are as fine as the swellest turnout of the rich in America.

A YOUNG RUSSIAN: MOSCOW

Russia has the largest proportion of illiterates of any civilized country, although in recent years conditions have been improving (see page 455).

Photo by Gilbert H. Grosvenor

Besides their church duties, the priests teach in synodical schools, where they give lessons in church history and the catechism and in reading and writing Church Slavonic—the language in which the church services are conducted.

restaurants even have particular colors in their signs, something like our barbers' poles. The name is written in green and yellow—the top part of the letters green and the lower part yellow. We were told that the green stood for eating and the yellow for drinking, so that at a glance the most ignorant might recognize a restaurant or a café (p. 460).

A WELL-PAID RULER

The Tsar of Russia is a well-paid ruler. He receives the revenues from the Russian crown lands, and their area is equal to that of one-third of the United States—aggregating more than a million square miles. If you were to take all of the land in the United States lying east of the Mississippi you would still need several States like Massachusetts to make up an area equal to that of the domain whose revenues are the property of the Tsar His total income ranges around 30 million dollars a year. Several years ago the imperial treasurer made a report on the Tsar's private bank account, in which is said to have occurred the following passage:

"Your Majesty need have no fear of ever coming to suffer the stings of poverty. Financially you are solvency itself. With one hand you could buy out the American multimillionaires, Morgan and Rockefeller, and still have sufficient to talk business with Baron Rothschild." The story goes that the flippancy of his treasurer very much displeased the Tsar. Whether the incident be an apocryphal tale or a true account of an actual happening, the royal banker told the truth if he wrote what is attributed to him.

When stern old Alexander gave orders to the tutors to the then heir to the throne, he said to them: "Neglect nothing that can make my son truly a man." Nicholas II, the present Tsar, was born in 1868, and ascended the throne in early manhood. At the age of 24 he made a tour of the Far East, visiting China and Japan. He returned to St. Petersburg by way of Siberia, and is the only Tsar who ever visited his Asiatic dominions.

Tsar Nicholas is noted for having made an effort to secure the peace of the world by a general conference. In his famous rescript of August 24, 1898, he

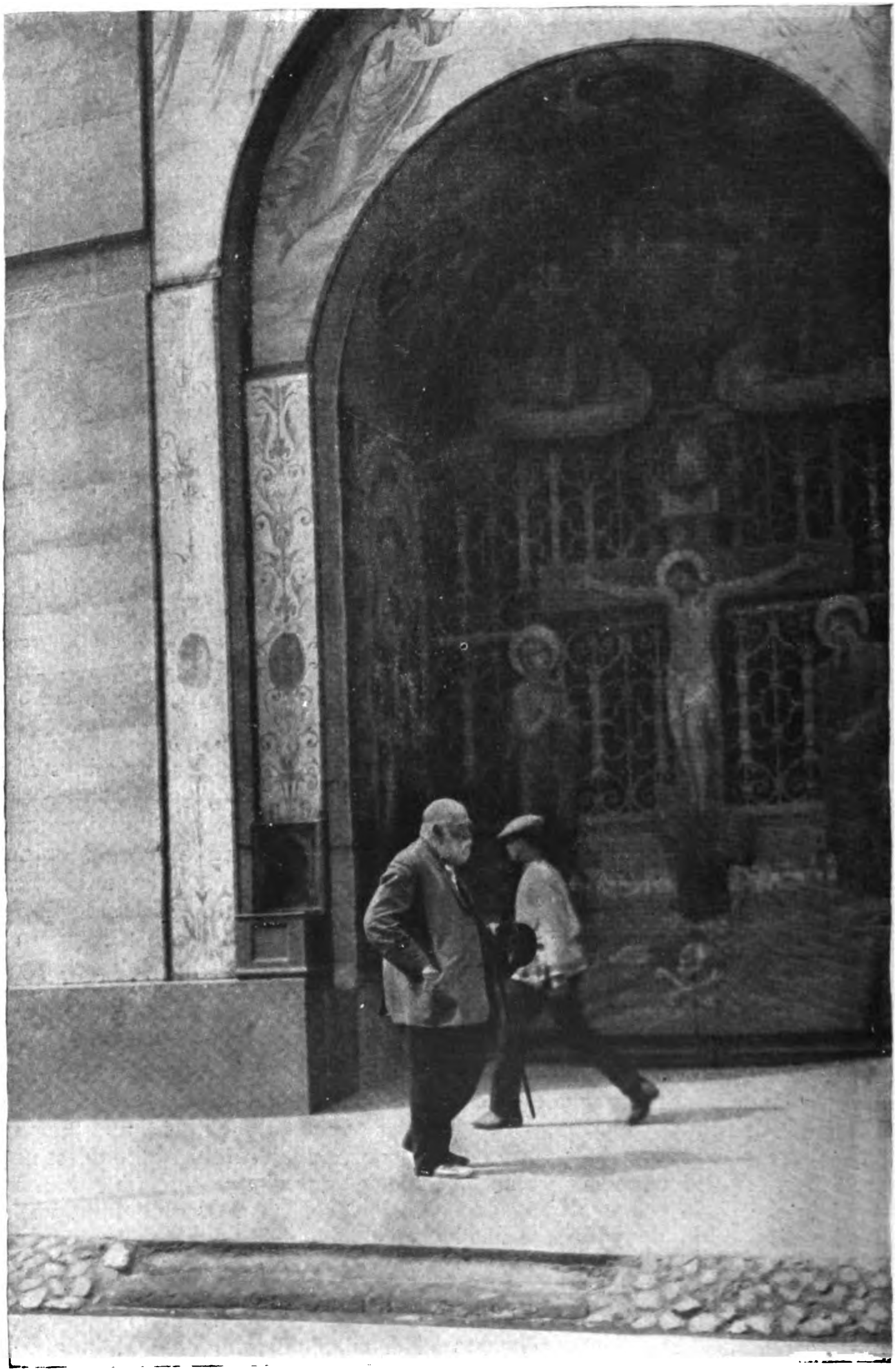


Photo by Gilbert H. Grosvenor

THIS SHRINE FACES ONE OF THE BUSIEST THOROUGHFARES OF MOSCOW

The author watched scores of people pass it, the majority of whom uncovered or crossed themselves as they went by. Finally, seeing this dignified individual appear, the author snapped the shutter as he took off his hat, but the gentleman had uncovered not out of respect to the shrine, but to mop his forehead, it being a frightfully hot summer day.

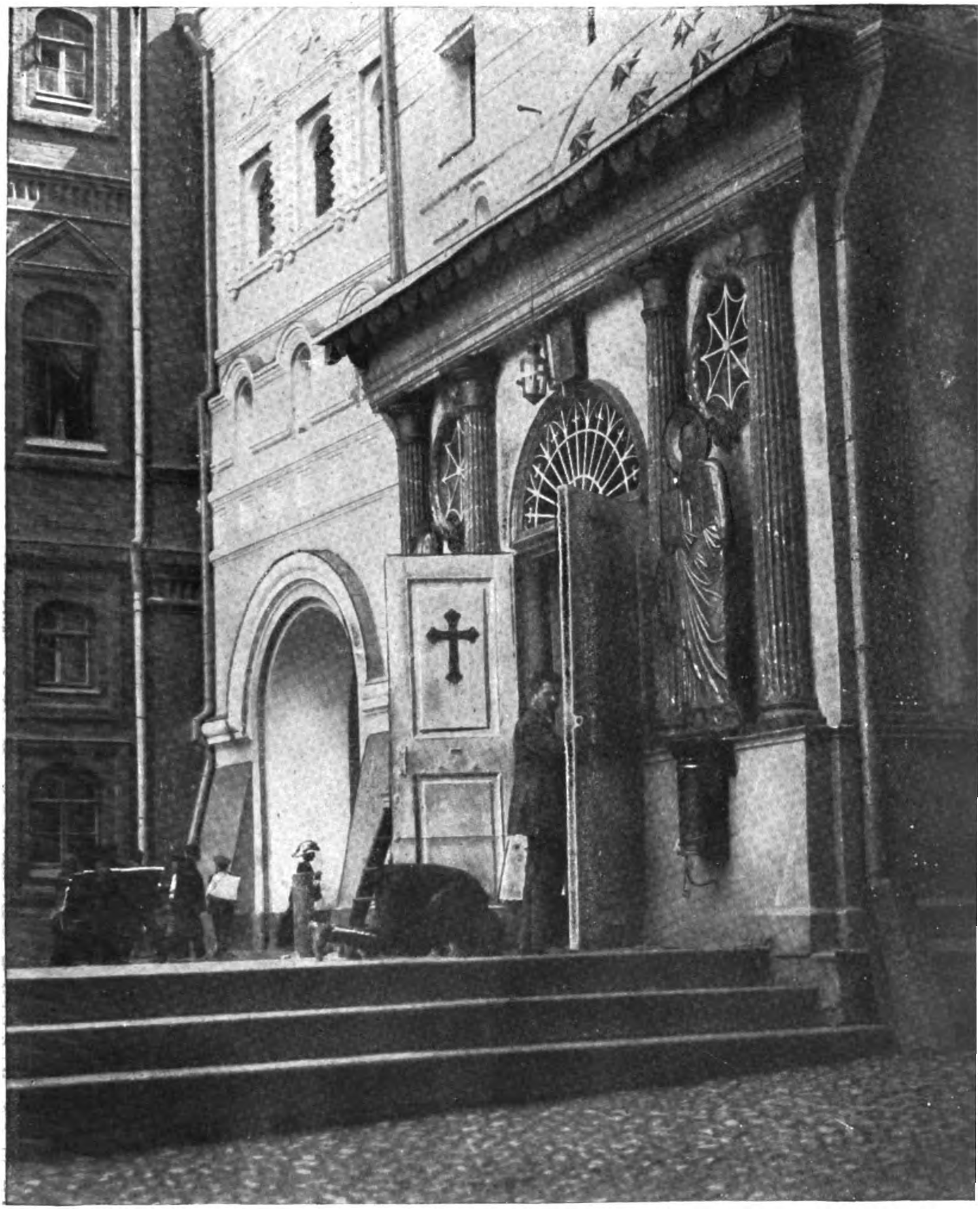


Photo by Gilbert H. Grosvenor

A RUSSIAN GENTLEMAN PROSTRATED IN PRAYER BEFORE THE IBERIAN CHAPEL

This little chapel, which is hardly wider than the open doors, is one of the most holy shrines in Russia. The Emperor always stops here on his way to the Kremlin. Under the bright blue roof, which is studded with gilded stars, is an icon of the Virgin brought from Mt. Athos and supposed to have miraculous powers of healing and blessing. Every morning, in a carriage drawn by six horses, attended by priests and servants, it is carried to the houses of the sick, to weddings, to the blessing of a new house, or to inaugurate the special sale of a merchant. For these visits it receives various presents, sometimes as much as $50. Its appointments are scheduled months ahead. While it is on its round of visits an exact duplicate of the sacred picture reposes in its place. Hundreds of pilgrims and Muscovites stop each day to kiss it, to say a prayer, or burn a taper before it. When we passed the shrine one night, as late as 11 o'clock, there were over 100 men, women, and children waiting to see the original picture return from its tour and to receive its blessing as it was carried in by the priests.

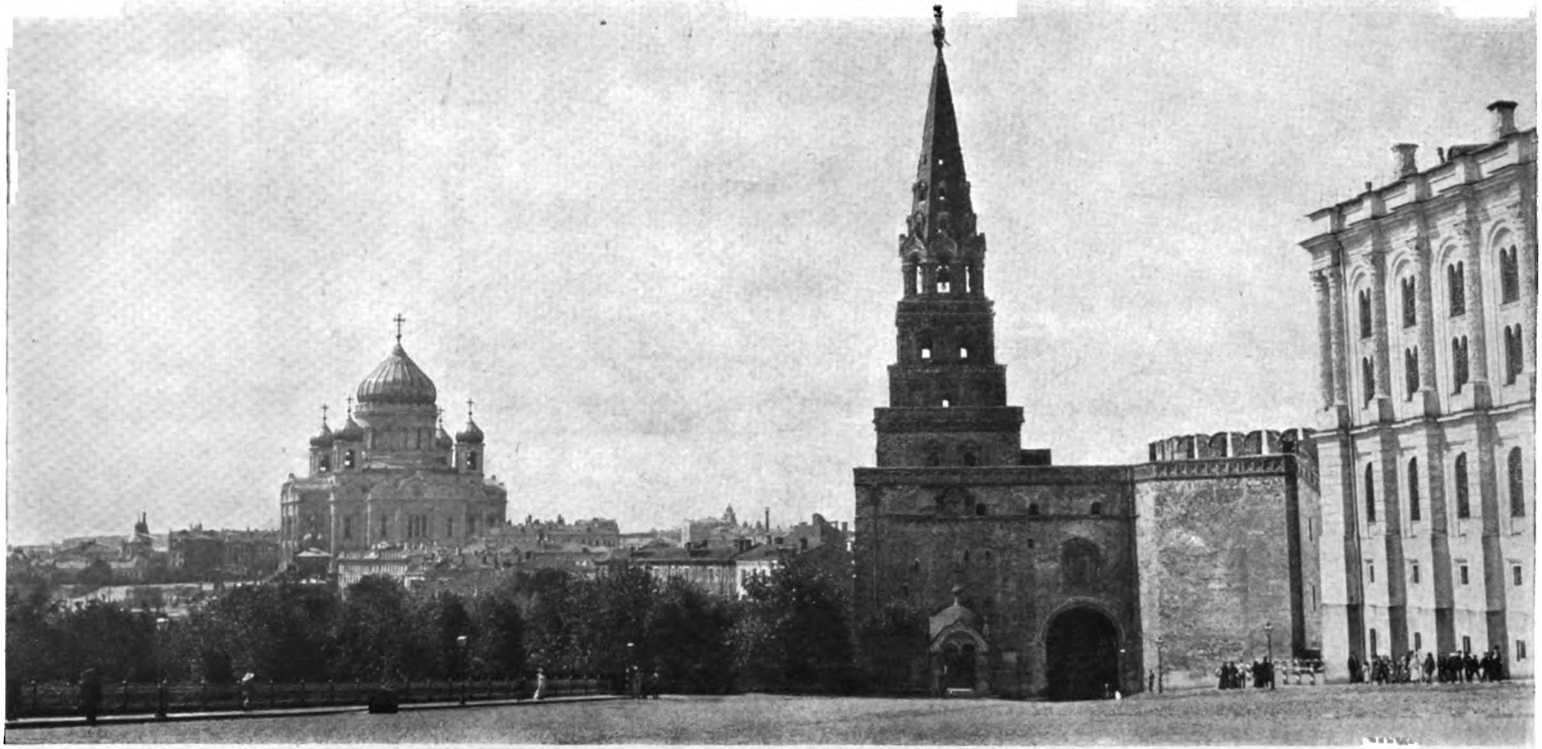


Photo by Gilbert H. Grosvenor

VIEW FROM AFAR OF THE CATHEDRAL OF OUR SAVIOR AND OF THE GATE THROUGH WHICH NAPOLEON FIRST ENTERED THE KREMLIN

This immense, beautifully proportioned white building, with its five golden domes glistening in the sun and standing out against a bright blue sky, is one of the memories which every visitor to Moscow will always cherish. The cathedral was built by popular subscriptions as a thanksgiving to God for the defeat of Napoleon's army (see also pages 469 and 498). All the materials used for the building are Russian, and all the work was by Russian architects, artists, and artisans.

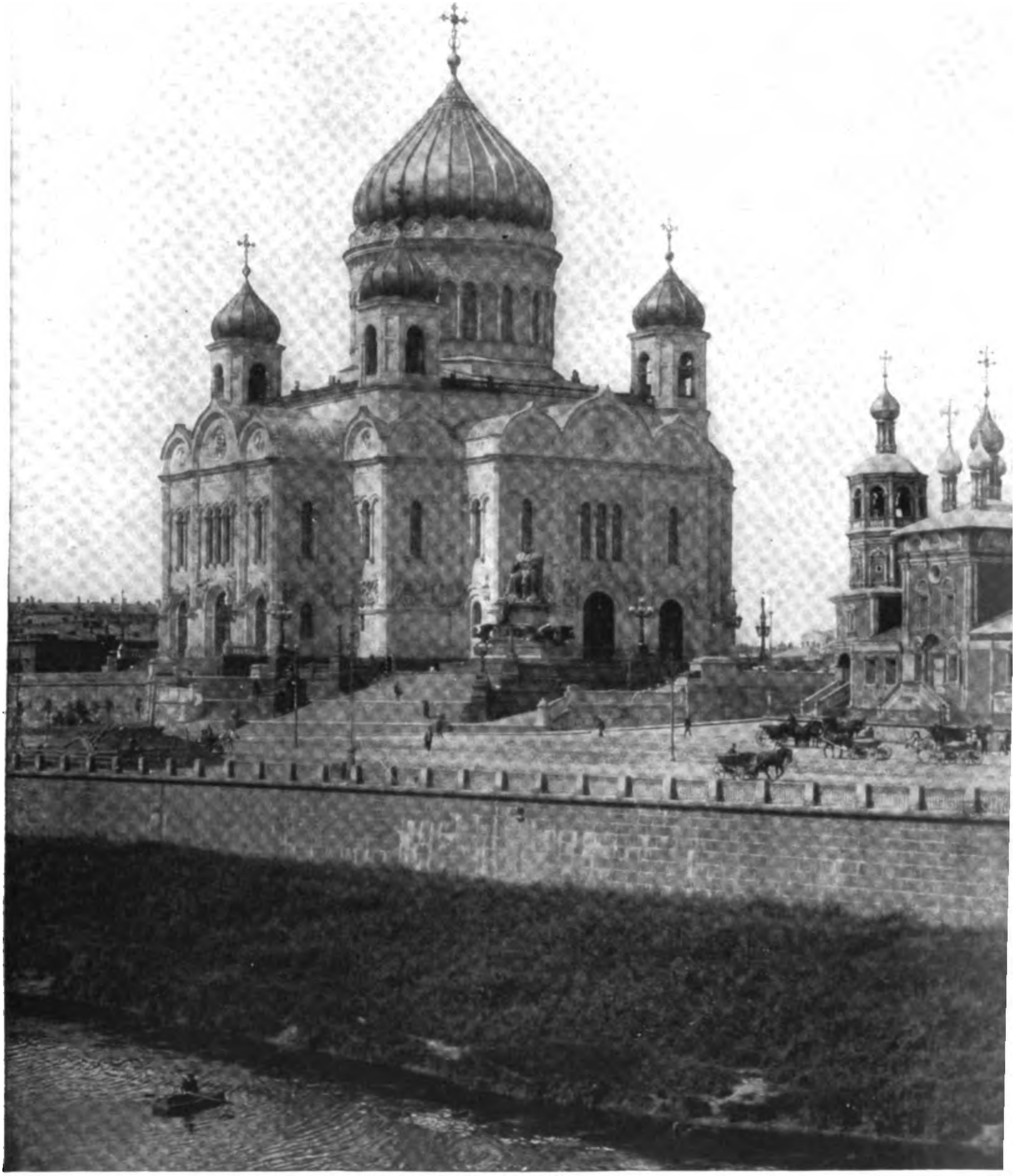
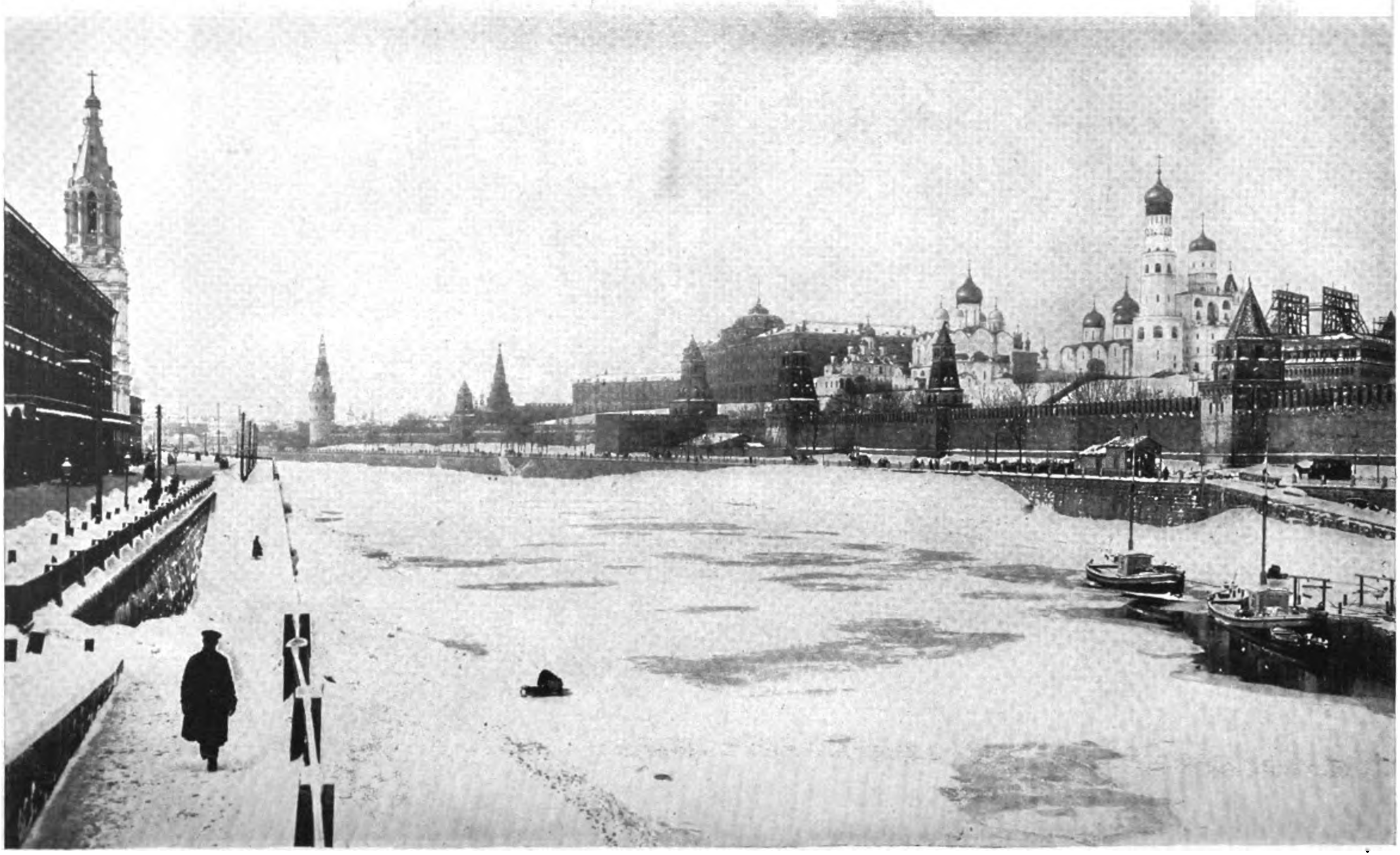


Photo by Gilbert H. Grosvenc

A NEAR VIEW OF THE WONDERFUL CATHEDRAL OF THE SAVIOUR

Its interior is a blaze of color (see page 498). Nearly seven thousand worshipers can find accommodations in it at one time. On Sundays the services are attended by so many men that women are wont to go on the other days of the week. This stately edifice, the magnificent cathedrals of St. Isaac's (see page 506), and the Church of the Resurrection (see page 499) were all erected within the last one hundred years, and are lasting monuments to the present religious spirit in Russia. No other Christian country within the last century has built three cathedrals, or even one, to equal these. It should be remembered, however, that the Russian church does not proselyte, whereas the Protestant and Roman Catholic churches have devoted hundreds of millions of dollars to foreign mission work.



MOSCOW IN WINTER

When bleak, white winter settles over the City of Moscow her energies are caught and subdued by its might. All wheel traffic ceases, the streets become almost bare of pleasure strollers, and all that moves without under the leaden, stinging sky moves hurriedly, with a definite goal in view, and takes the shortest course. Moscow lives under a reddened sun but for a short time each day. Only the cabman, with his dozen coats, a creature thick beyond imagination, cares to loiter chill afternoons and evenings out of doors.

declared that the time had arrived for throwing off the crushing economic burdens entailed by the armed peace of Europe, and that the way to do so seemed to be through a conference of all the peace-loving States and the focusing of all their efforts in behalf of the noble idea of the triumph of universal peace over the elements of trouble and discord. His call resulted in the Hague peace conference of 1899, with 26 governments represented, and that of 1907, with 44 nations participating. Most of the Powers regarded the plan as altogether visionary, but the present permanent Court of Arbitration is largely the result of the Tsar's initiative. Of all the Great Powers, the United States was the only one unreservedly in favor of disarmament.

It is the irony of fate that the ruler who called the conference has had to participate in two of the bloodiest wars of all history in the sixteen short years that have elapsed since the issuance of his call in behalf of the world's peace.

The government of Russia is a limited monarchy under an autocratic Tsar, whose official title is "Emperor and Autocrat of all the Russias." The Tsar's autocratic power was theoretically surrendered in 1905 and 1906, when he created the Duma and the Council of State, corresponding in a measure to our own House of Representatives and Senate, without whose sanction no law shall go into effect. The Duma is made up of elected members who are chosen by electoral colleges instead of direct votes, and the peasants have scant representation in these electoral bodies. The Council of State is composed of representatives of the Tsar, of the provinces, of the church, of the educational institutions, of industry and commerce, and of the nobility. One-half of its members are appointees of the Tsar.

THE GERMANS CONTROLLED THE GREATEST SHARE OF RUSSIA'S FOREIGN BUSINESS

Before the outbreak of the present war Germany was walking away with the lion's share of Russia's foreign business. Many English statesmen had noted this and had commented upon it. At Chelyabinsk and Vladivostok Great Britain was getting a bad third, with Germany first and America second. One writer declares that the only thing he noticed in which Great Britain was ahead was sauce, and complained that the British sought to capture Russian trade with catalogues printed in English. Moscow merchants frequently asserted that England would not trade in as sensible a manner as the Germans, because they expected everybody to read and speak English, because they quoted all prices in pounds and shillings, because they never knew a freight rate, and because they always had to "consult the firm." On the other hand, these merchants declared, "the Germans know everything, solve every problem, and meet every emergency." Germany established branch banks in Russia, and could give from 12 to 18 months' credit to Russian firms, and credit the Russian tradesman always asks.

German, until the war, was a much more necessary language for a traveler in Russia than French or English. There were many German shop-keepers, and the chambermaids and waiters of the big hotels all spoke German.

While Russia's foreign trade has been regarded as full of potentialities, measured by population standards it is exceedingly small. With a population 70 per cent larger than that of the United States, its imports were less than 40 per cent as great as those of the United States in 1913, and its exports were only a little more than a third as great.

The imports through the port of New York alone are one and a half times as great as those of the entire Russian Empire, while New York exports commodities of a hundred million dollars greater value than the whole of Russia sends into the channels of international trade.

Anyone who has seen Russia's leading seaport, Petrograd, marvels that Russia has been able to export as much as she has done. The city is built on a marsh as far north as the southern tip of Greenland. Its waters freeze hard before Thanksgiving and do not melt before the end of April, and all its commerce must pass in or out by a canal from Kronstadt, 23 feet deep and 17½ miles long (see also pages 424, 484, and 507).

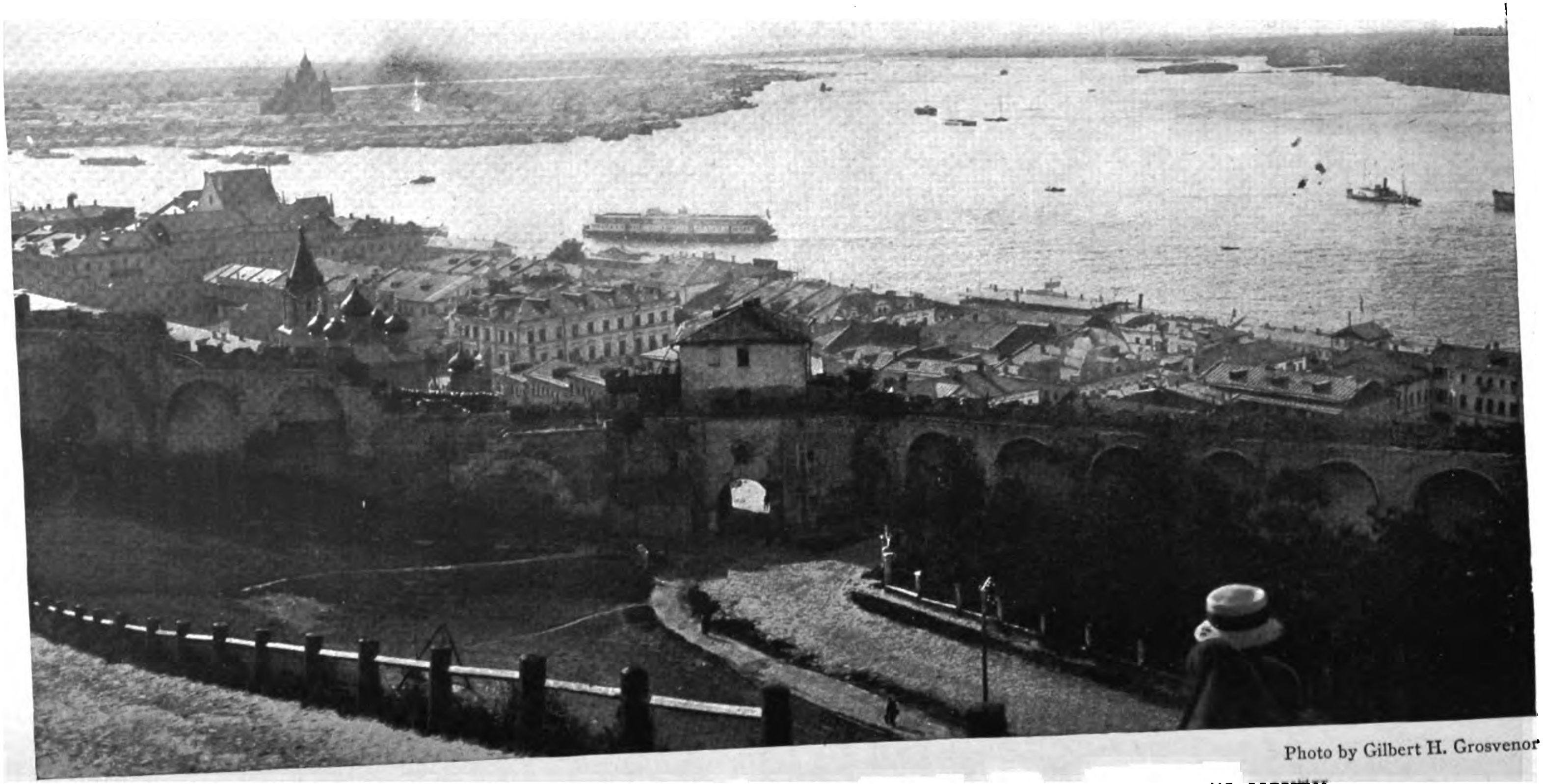


Photo by Gilbert H. Grosvenor

RUSSIA'S GREATEST RIVER, THE VOLGA, AT NIZHNI-NOVGOROD, 1,500 MILES FROM ITS MOUTH

Although as far from its mouth as Denver is from New York, Nizhni-Novgorod is still some 800 miles below the source of the Volga. In the upper reaches its depth is not more than a foot and a half, although its width is 600 feet. Special types of flat-bottomed boats make it navigable even there. Twenty years ago the sales at the annual fair, open only one month in summer, amounted to $100,000,000, but the development of railways is diverting this commerce elsewhere and the fair is losing much of its Asiatic character, and the river traffic, as on our own Mississippi, has greatly decreased. The fair grounds are the flats over which the cathedral towers on the left, between the Volga and Oka rivers.

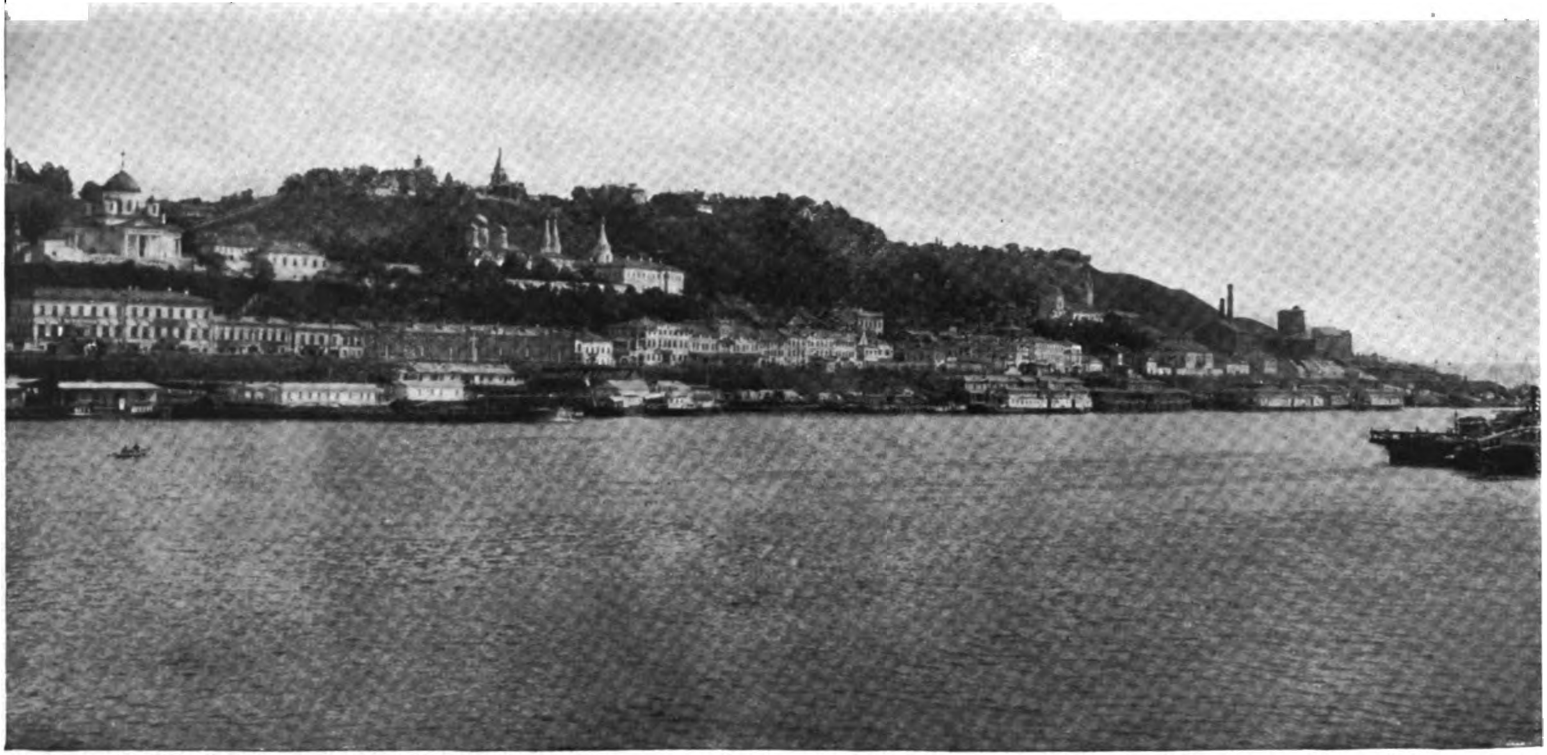


Photo by Gilbert H. Grosvenor

LOOKING TOWARD THE WATER FRONT OF THE OLD CITY OF NIZHNI-NOVGOROD, FROM THE FAIR GROUNDS

The banks are crowded with river steamers and barges that have brought silks from Persia, great bales of cotton and madder from Bokhara, hides from Siberia, and oil from the Caspian. Behind are seen the domes and spires of several monasteries and churches. We visited one of the convents, where we found a beautiful garden with lovely walks beneath great trees. The gardens are tended by the nuns, who also work very industriously in embroidering vestments for the churches and patrons. We were present at vespers in the convent which was attended by 200 nuns, all dressed in blackest of robes and ugly black head-coverings, with long black veils, while the services were conducted by two priests in gorgeous, richly embroidered golden robes.

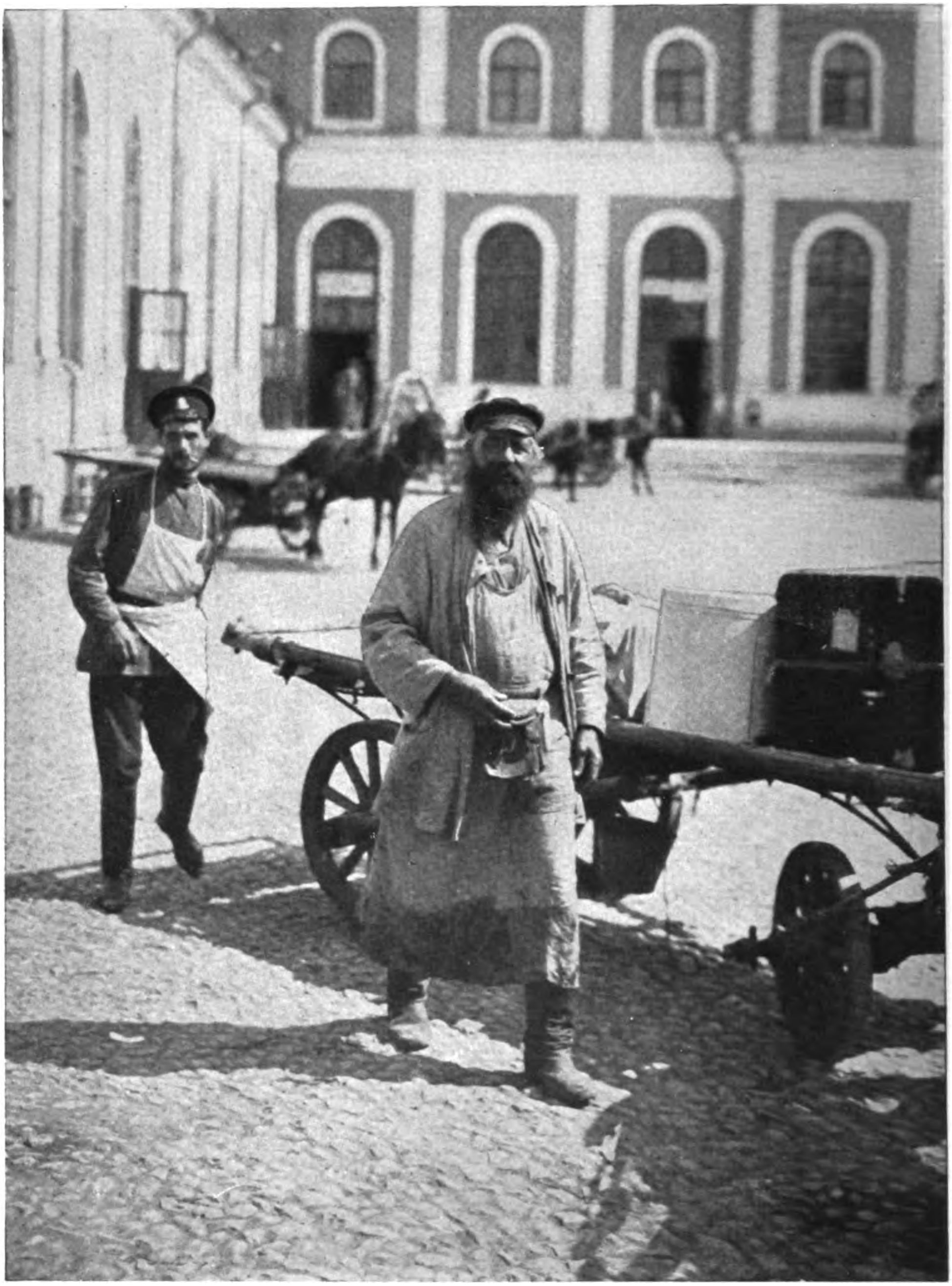


Photo by Gilbert H. Grosvenor

A PORTER AT THE RAILWAY STATION, NIZHNI-NOVGOROD

This big fellow, over 6 feet 2 inches in height, with his long flaxen beard and blue eyes, is a good specimen of the Russian peasant. His father was a serf. Perhaps the greatest single act of any ruler in all history was that of Tsar Alexander II in freeing the 50 million serfs of Russia in 1861. He released from bondage more than half the people of his empire, nearly as many persons as are now living in the 12 most populous States of the Union. Lincoln's proclamation affected less than four million (see text, page 449).

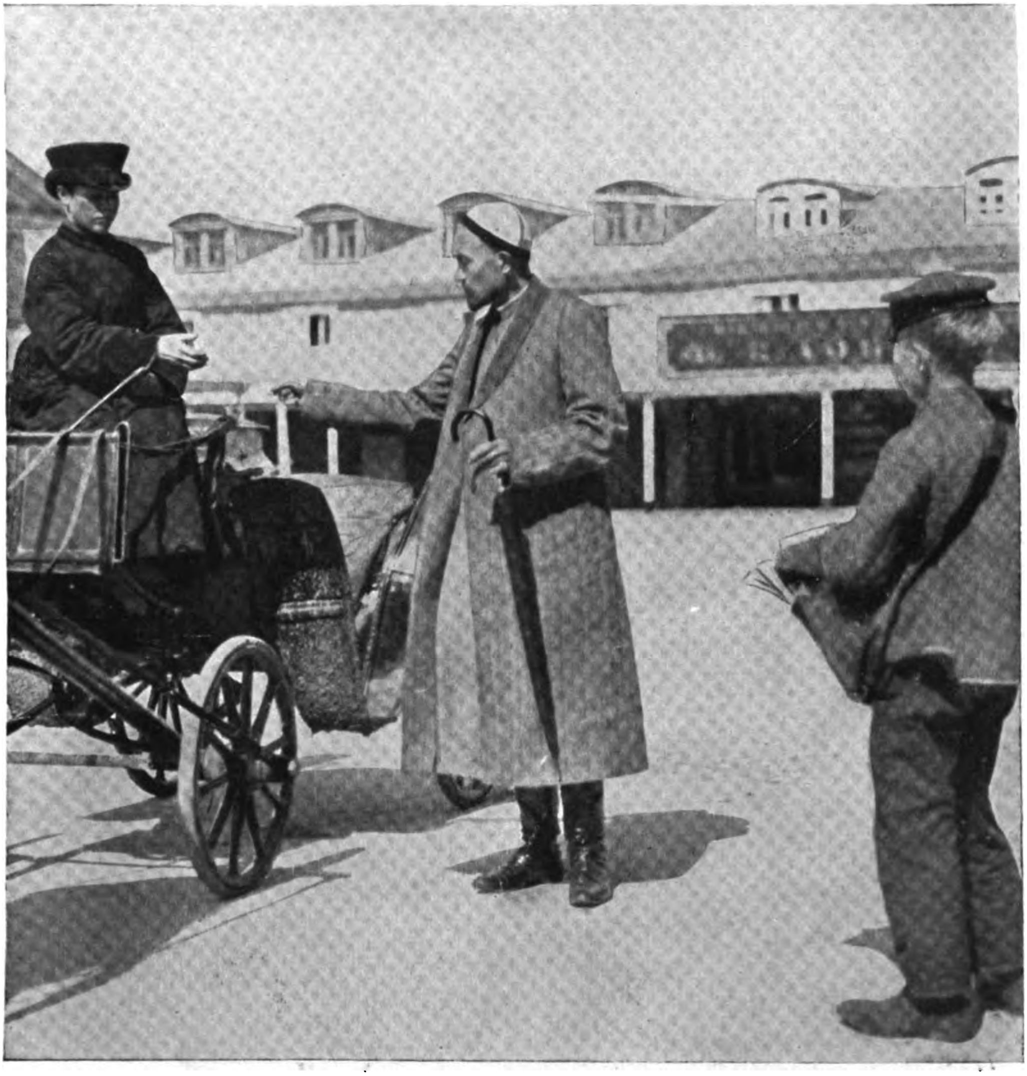


Photo by Gilbert H. Grosvenor

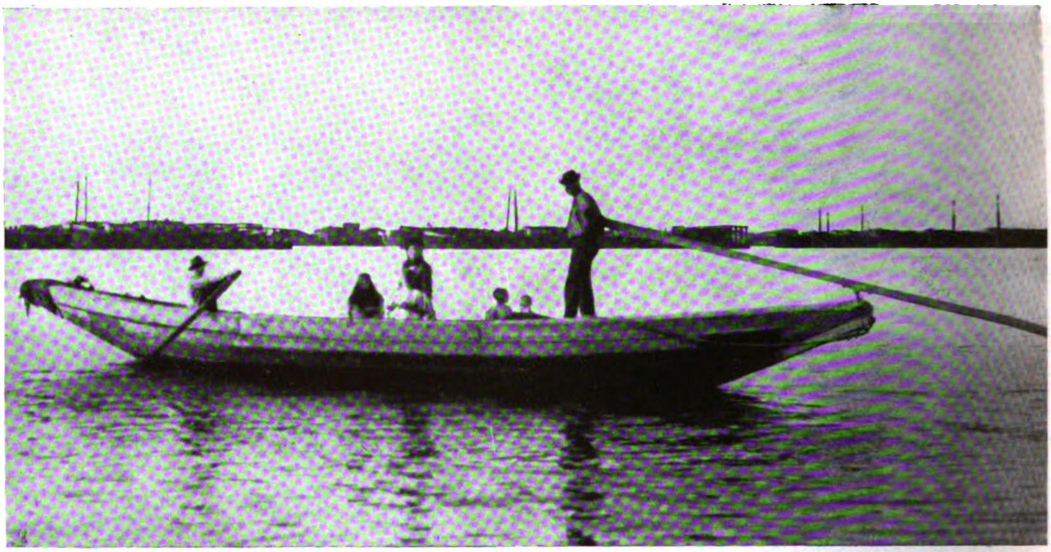
A WEALTHY TATAR MERCHANT WHO HAS JUST ARRIVED FOR THE GREAT ANNUAL FAIR AT NIZHNI-NOVGOROD

Note his tall boots, polished like a mirror, and his small skull-cap, which marks the Tatar

A TREASURE HOUSE

Russia is immensely rich in undeveloped mineral resources. Billions of tons of coal await the pick and shovel, vast deposits of iron ore lie ready for the coming of the railroad and blast furnace, and rich oil deposits already have placed Russia second only to the United States in the production of petroleum. The Empire, in fact, is bountifully supplied with almost every kind of mineral deposit in the category, from asbestos to zinc.

The Ural Mountains region seems to be one of Nature's principal treasuries of mineral wealth. Here nearly all of the world's platinum is mined, the annual output ranging around 200,000 ounces. The Ural iron-ore deposits appear to be almost limitless, and already they are producing four-fifths of all the pig-iron used in Russia. There is a profusion of precious stones; the diamond, sapphire, emerald, tourmaline, topaz, and amethyst, as well as garnet, jade, beryl, aquamarine,



A BOAT ON THE VOLGA RIVER

The Russian gets no enjoyment on the water. On an ideal Sunday afternoon in midsummer we made an excursion to Sparrow Hill, in the suburbs of Moscow. From its summit we could see the beautiful Moskva River, fringed with trees and meadows, winding around the plain in which Moscow lies; but on the river not a single pleasure boat, not even a single canoe. The people of any other city of equal size in Germany, France, England, or America (Moscow has 1½ millions) would have covered the river on such an afternoon with canoes and pleasure craft.

МЕРА
И. К. ПОДКЛАДНИНЪ

Photos by Gilbert H. Grosvenor

A PRISONER: NIZHNI-NOVGOROD

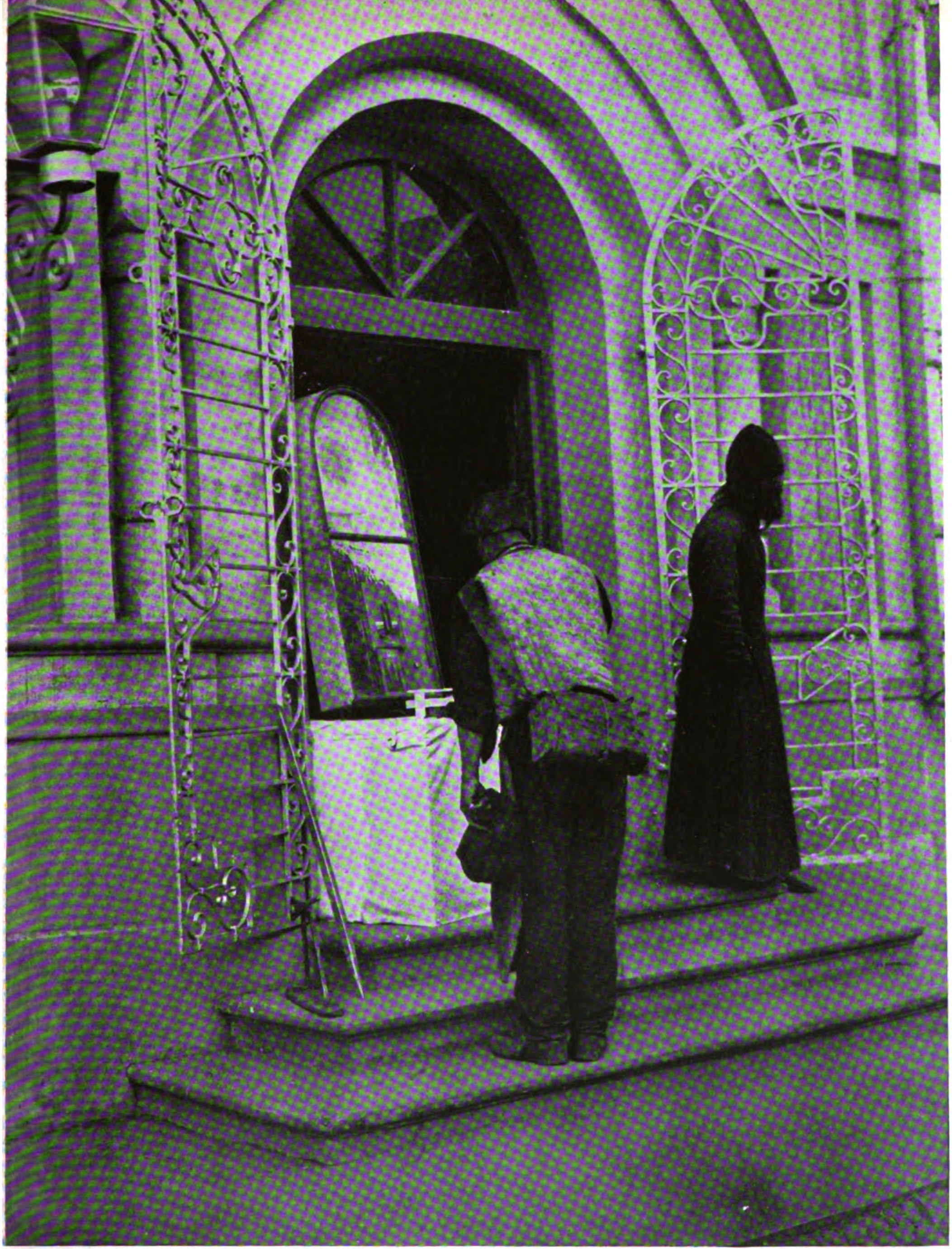
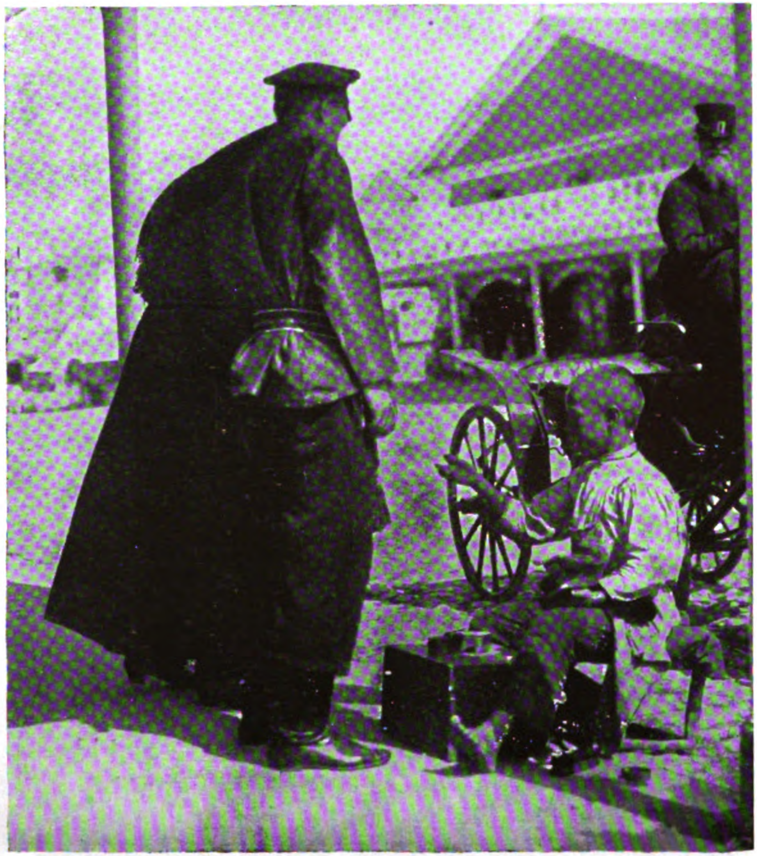


Photo by Gilbert H. Grosvenor

THERE ARE NOT AS MANY SHRINES AND CHAPELS IN NIZHNI-NOVGOROD AS IN MOSCOW

This one is by the station, and a laborer has lingered to offer his devotions and leave a kopeck before the Icon on the table; a representation of Christ in bronze and mosaic, protected from the weather by a glass frame. Note the candle burning behind the glass. The pictures accompanying this article, showing peasant and gentlemen at devotion, pages 427, 433, 441. 443, and 467, are actual snapshots. None of them were posed or planned; similar scenes may be seen every moment, everywhere in Russia. His religion is very real to the Russian, and his God is really omnipresent to him; he sees His Spirit everywhere, and everywhere acknowledges it with the sign of the cross and the words "Oh, Lord! have mercy," or "Glory be to Thee, Oh, Lord!" (see also page 461).

THIS MAN IS TYPICAL OF THE THOUSANDS OF BIG MUSCULAR PEASANTS WHO THRONG NIZHNI-NOVGOROD DURING THE FAIR



Photos by Gilbert H. Grosvenor

A RUSSIAN BRIDEGROOM AT NIZHNI-NOVGOROD PAYING FOR HIS BOOTBLACK

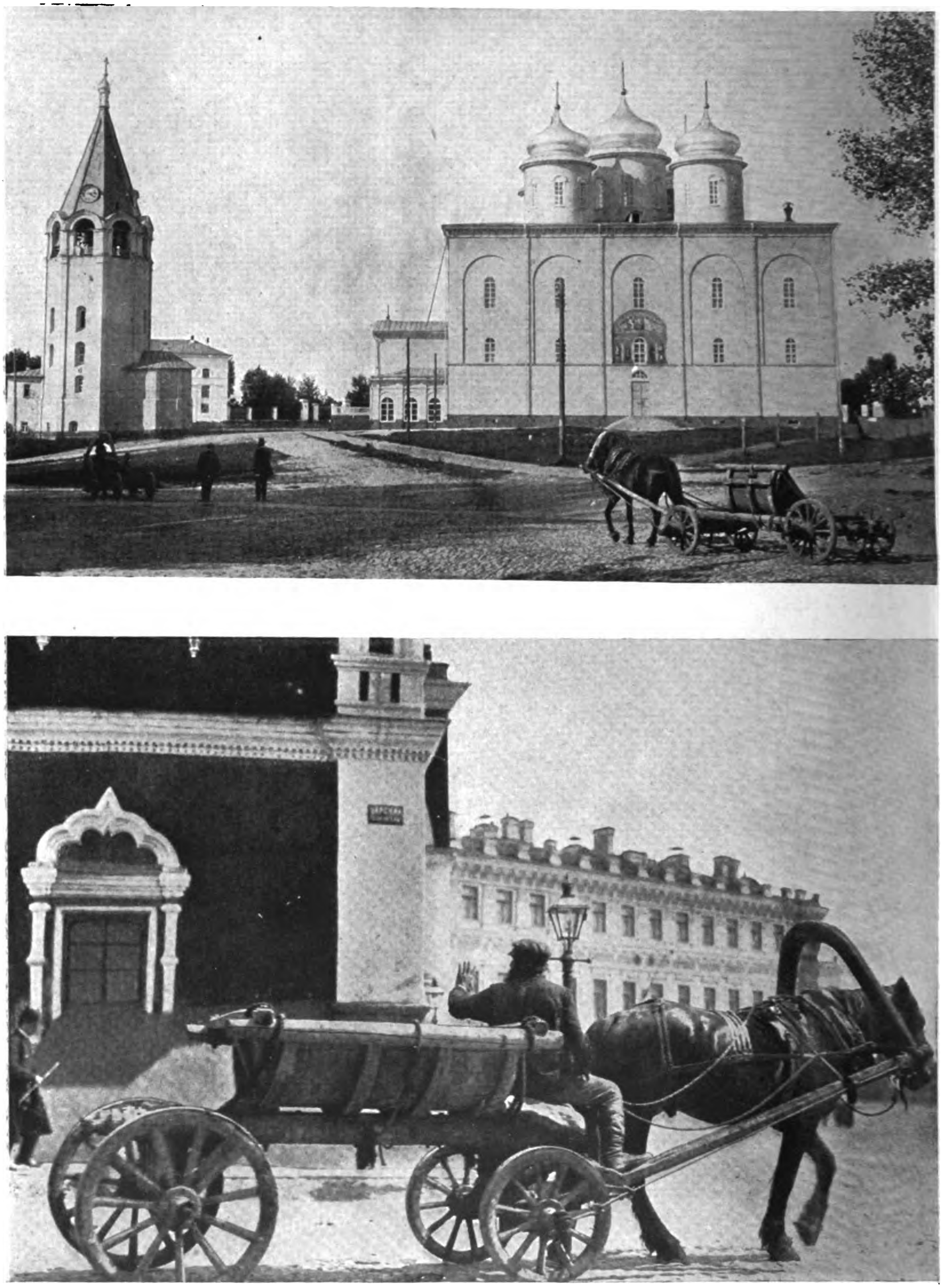
He wore a bright crimson silk blouse, while his bride's dress was of somber black

A MOUJIK LOOKING FOR WORK: NIZHNI-NOVGOROD

THIS WOMAN IS WEARING STRAW SANDALS; A LUXURY, FOR MOST PEASANT WOMEN GO BAREFOOTED

Photos by Gilbert H. Grosvenor

PEASANTS: NIZHNI-NOVGOROD



Photos by Gilbert H. Grosvenor

TWO ILLUSTRATIONS OF THE UNIQUE TYPE OF CART USED THROUGHOUT RUSSIA

These carts carry about 1,100 pounds each, and are so built that they will negotiate the muddiest roads. The upper picture (in the old fortress at Nizhni-Novgorod) shows the manner in which the cart may be tilted and easily emptied. The lower picture depicts the peculiar and universal Russian yoke.

Photo by Gilbert H. Grosvenor

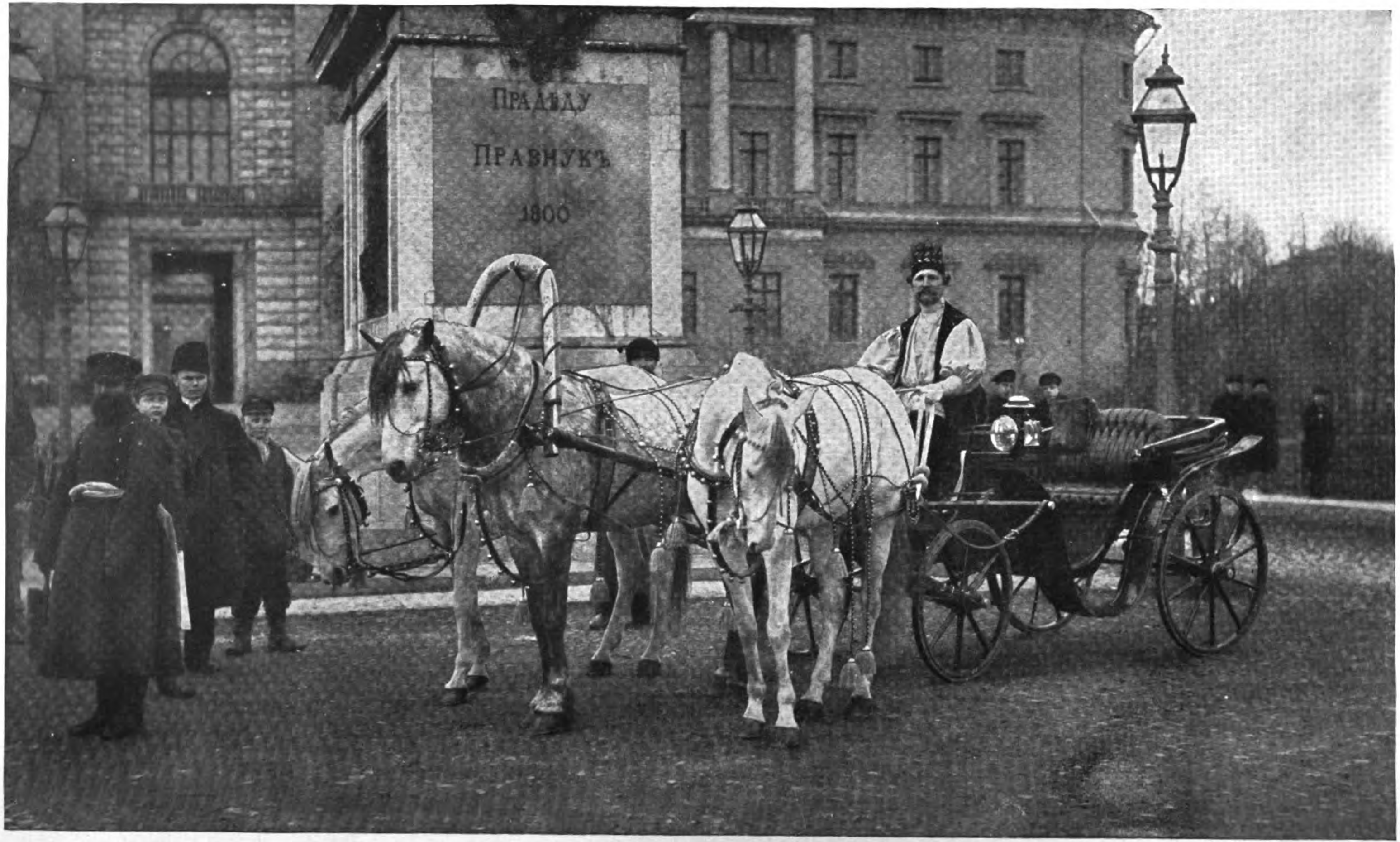
A VODKA SHOP (SALOON) IN NIZHNI-NOVGOROD

Every dram shop in the Russian Empire is now said to be closed. "The abolition of the sale of intoxicants in Russia represents the greatest prohibition victory of the age. With one dash of the pen one-sixth of the earth's surface and one-tenth of its population went 'dry.' Heretofore vodka-drinking has been the curse of the Russian masses" (see text).

and chrysoberyl, are found imbedded in the solid sides of the rugged Urals. Most of the porphyry, jasper, and malachite used in the adornment of the important buildings of Petrograd and Moscow, and which give them that inimitable beauty which every tourist notes, came from this great treasure-house.

There are extensive gold deposits in Siberia, its mines producing about $25,000,000 worth of the precious metal annually. Eleven thousand gold-miners are employed in normal times in the mines of western Sibera, and 30,000 in those of eastern Siberia.

The wages in eastern Siberia are 83 cents a day, while those in western Siberia often are as low as 10 cents a day. The men in the mines of eastern Siberia work morning, noon, and night, recognizing neither Sunday nor feast day. The government finds that in this way it can



THE CARRIAGE OF AN ARISTOCRAT IN PETROGRAD

Russia is the home of mettlesome horses and of inimitable horsemanship. The wiry, enduring horse of the steppes has been crossed with the larger-boned, dragoon-mount of East Prussian and Silesian breeders. The resulting strain is powerful, clean-limbed, speedy. Horsemanship is an important part of the Russian gentleman's education. Elegance of carriage on horseback and admirable driving are more often seen in the Tsar's domain than in any other part of Europe.

Photo and copyright by Underwood & Underwood

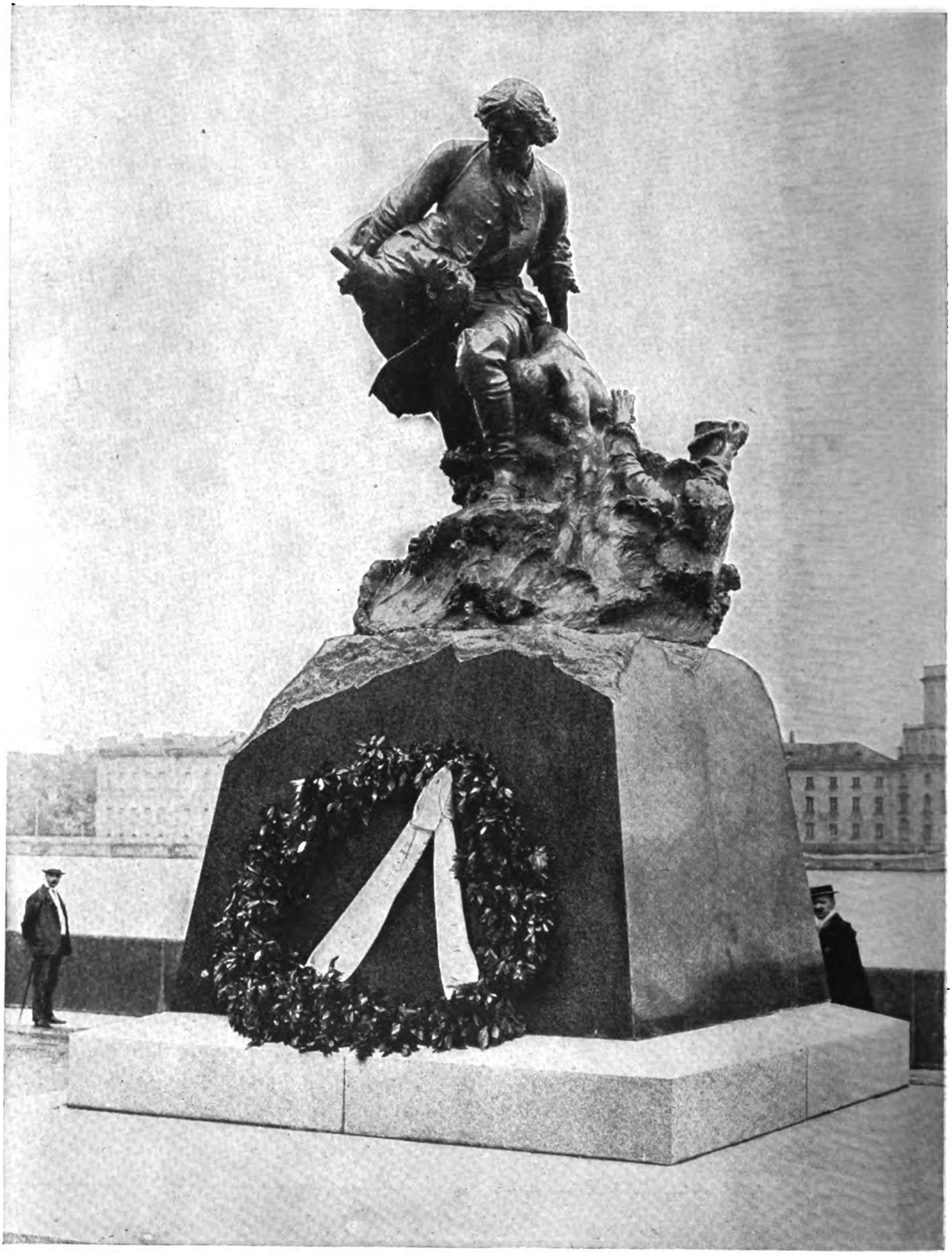
A GROUP OF RUSSIAN COSSACKS

The Cossacks are the world's foremost rough riders. Vast areas of land were many years ago set aside for them by the government in return for their military services. These lands, totaling 146,000,000 acres—105,000,000 of these arable and 10,000,000 under forest—are among the richest in Russia. They have been apportioned on the basis of 81 acres per person, leaving about a third in reserve. The men, in return for this bounty of the government, are required to give 20 years of service—one-third active—to the army, furnishing all their own equipment, including horses, except arms and ammunition. Their rich lands give them large incomes, and they are better educated than any other like body of the general population.

prevent the riotous debauchery of the mining camp and can send the miner home for the winter with money for his family.

While Russia produced one-fifth of the world's petroleum in 1910, its oil industry is not in as satisfactory a state as that of the United States. In 1900 the production of the United States amounted to 2,672,000,000 gallons, as compared with 3,030,000,000 for Russia. In 1910 the production of the United States had reached 8,801,000,000 gallons, while Russia's output had fallen to 2,850,000,000 gallons.

Across Russia's broad reaches, extending from 18 degrees east of Greenwich to 169 west, there is a great belt of forest containing 900 million acres that is the finest timbered area still intact on the face of the earth. While wood is still almost the universal fuel, no land-owner is allowed to convert his forest lands to other uses, if the clearing of the land has not been provided for in some general enactment, until he has first notified the



THIS STATUE IN PETROGRAD COMMEMORATES THE ACT OF HEROISM WHICH RESULTED IN THE DEATH OF PETER THE GREAT

Peter had been confined to the house for some days with a high fever, and one afternoon, in spite of the protest of his physician, went for a walk along the Neva. Seeing a woman and child who were attempting to cross the river on the young ice break through and in danger of drowning, without a moment's hesitation he plunged into the water to their rescue and saved both. But the chill was so serious that it aggravated his complaint and caused his immediate death (see page 442).

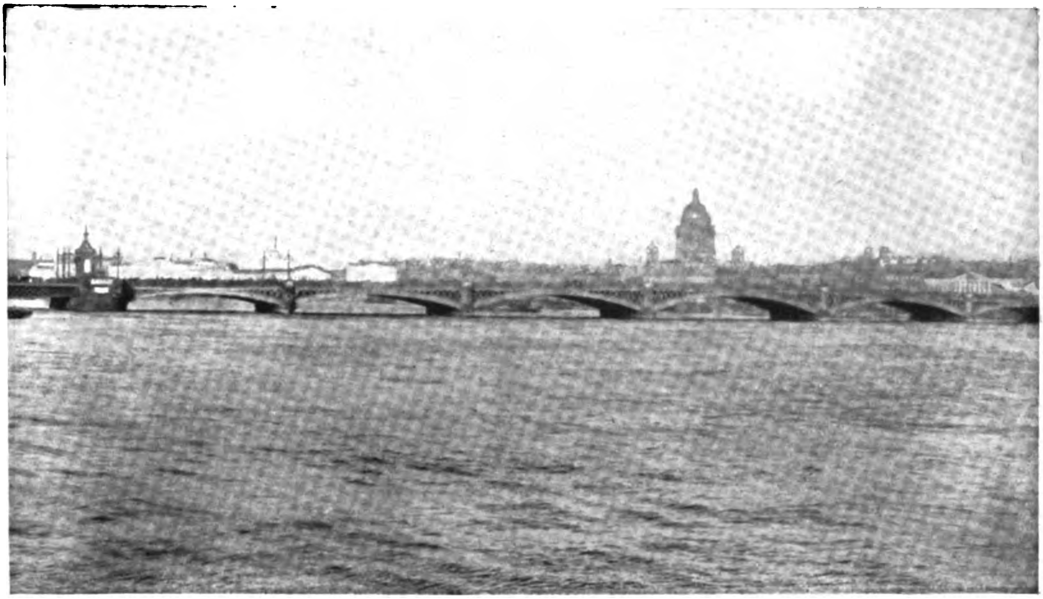
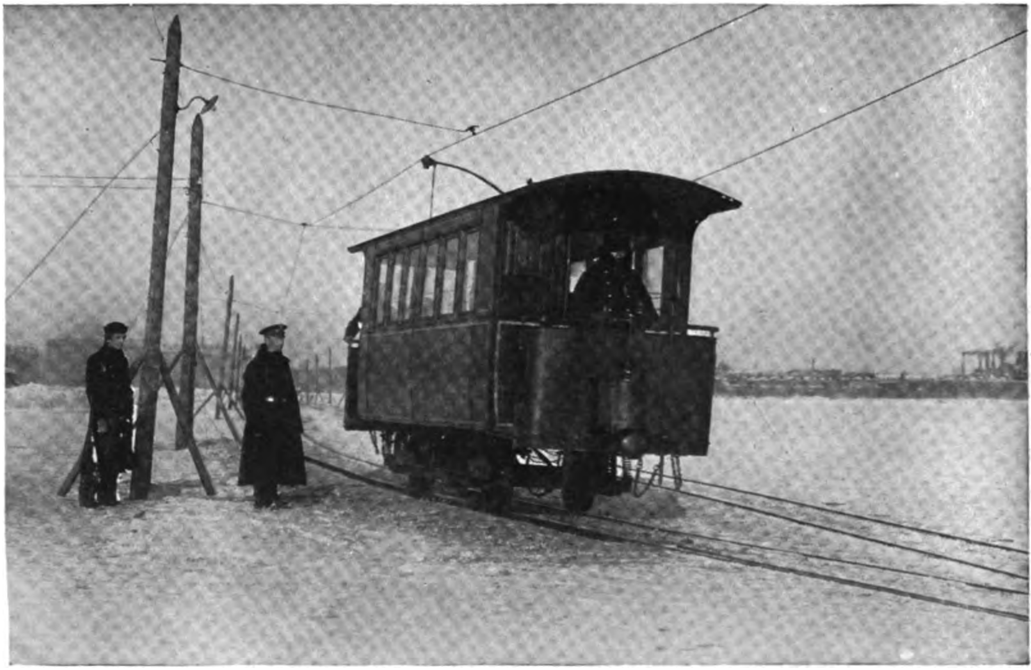


Photo by Gilbert H. Grosvenor

THE FIRST AND LAST IMPRESSION OF PETROGRAD IS THE NOBLE GOLDEN DOME OF ST. ISAAC'S WATCHING OVER THE CITY (SEE PAGE 508)



THE RIVER IN WINTER IS COVERED WITH ICE SO THICK THAT TRAM CARS RUN OVER IT

One must admire the Russian for the energy he has displayed in making a seaport of Petrograd, and in developing a commerce for it almost as great as that of the city of Baltimore. The city is built on a marsh as far north as the southern tip of Greenland. Its waters freeze hard before Thanksgiving and do not melt before the end of April, and all its commerce must pass in or out by a canal from Kronstadt, 23 feet deep and 17½ miles long. "With all its geographic greatness Russia is about as poor in natural outlets to the world as the smallest of the countries of the earth. Holland could be hidden in the vast reaches of the Russian plain, almost as a needle in a haystack, and yet Amsterdam alone does more international business than all the seaports of Russia together" (see pages 423-425).

government of his intention and received its permission.

No forests essential to the water supply may be cut, and cattle are not allowed to graze on reforested areas until the young trees are 15 years old; or have reached a height of 10 feet. All forest areas considered protective against erosion by water or the shifting of sands are exempt from taxation.

RUSSIAN INDUSTRIES

Russia ranks third among the countries of Europe in the number of cotton spindles in operation. Out of the 131 million cotton spindles in the world, 54 million are in Great Britain, 28 million in the United States, 10 million in Germany, and eight million in Russia. Besides 137,000 automatic and 2,000 hand looms operated by mules, there were about 40,000 hand looms operated by peasants. The 750 factories employed about 388,000 hands. The Russian manufacturers last year asserted that if they could buy they could use $100,000,000 worth of our cotton annually. but that most of it was sold several times before reaching the mill owner, thus making the price to him too high, with no advantage therein to the producer himself. Before the war Russia was producing $300,000,000 worth of cotton goods annually, using raw cotton to a value of $120,000,000, $48,000,000 being the value of the portion coming from the United States. An import duty of nearly six cents a pound is levied on raw cotton entering Russia.

Employees in Russian factories must be given all the holidays of their respective church, whether orthodox or otherwise. A factory employing a thousand hands must maintain at least a ten-bed hospital. Damages for the death of a workman, as a result of an accident occurring while in the discharge of his duties, must be paid to the needy members of his family.

Wages in Russia are very low. A common laborer in Petrograd receives about forty cents a day, and a carpenter seventy cents. At Moscow the monthly wages of men in factories are from five to eight dollars, and of women from three to six dollars.

The hours of labor are long—from ten to eleven and a half hours—and yet so anxious are the peasants who work in the factories to learn to read and write that they often go, after the long, hard day's work in the factory, to night schools.

THE JEWS

More than half of the 13 million Jews in the world live in Russia, where they are officially called "Those who follow the Mosaic Creed." While the rest of the world—Germany, Austria, France, and Spain—were persecuting these people Poland was offering them asylum, and they accepted that haven as a God-given refuge. When Poland was partitioned the bulk of its Jewish population went with Russia's share, and that is how Russia came to get its Jewish problem.

The Jews in Russia have had a very hard time of it for generations. An alien race prospering where the native race goes hungry naturally arouses bitterness, and that is what has caused the Russian government to adopt such strenuous restrictive measures against the Jews. Instances of this repression is written into every chapter of Russian law. There is a double tax on Kosher meat, first on the animal and then on the meat itself; there is a tax on religious candles used by the Jews; the head of the family must pay a tax for the privilege of wearing a skull-cap during prayers; not more than 10 per cent of the students of a university may be Jews. The laws forbid the Jews to settle outside of the urban districts of the 114 towns embraced in what is known as the "Pale of Jewish Settlement." Many do settle outside and live in peace until a storm arises on the political horizon, when they absent themselves until it blows over. No office is open to a Jew unless he renounces his religion, which only a fraction of 1 per cent of them ever do.

Russia feels that domestic policy requires these restrictions of the Jews. Without them, and unfettered, the wide-awake Jew would be too much for the

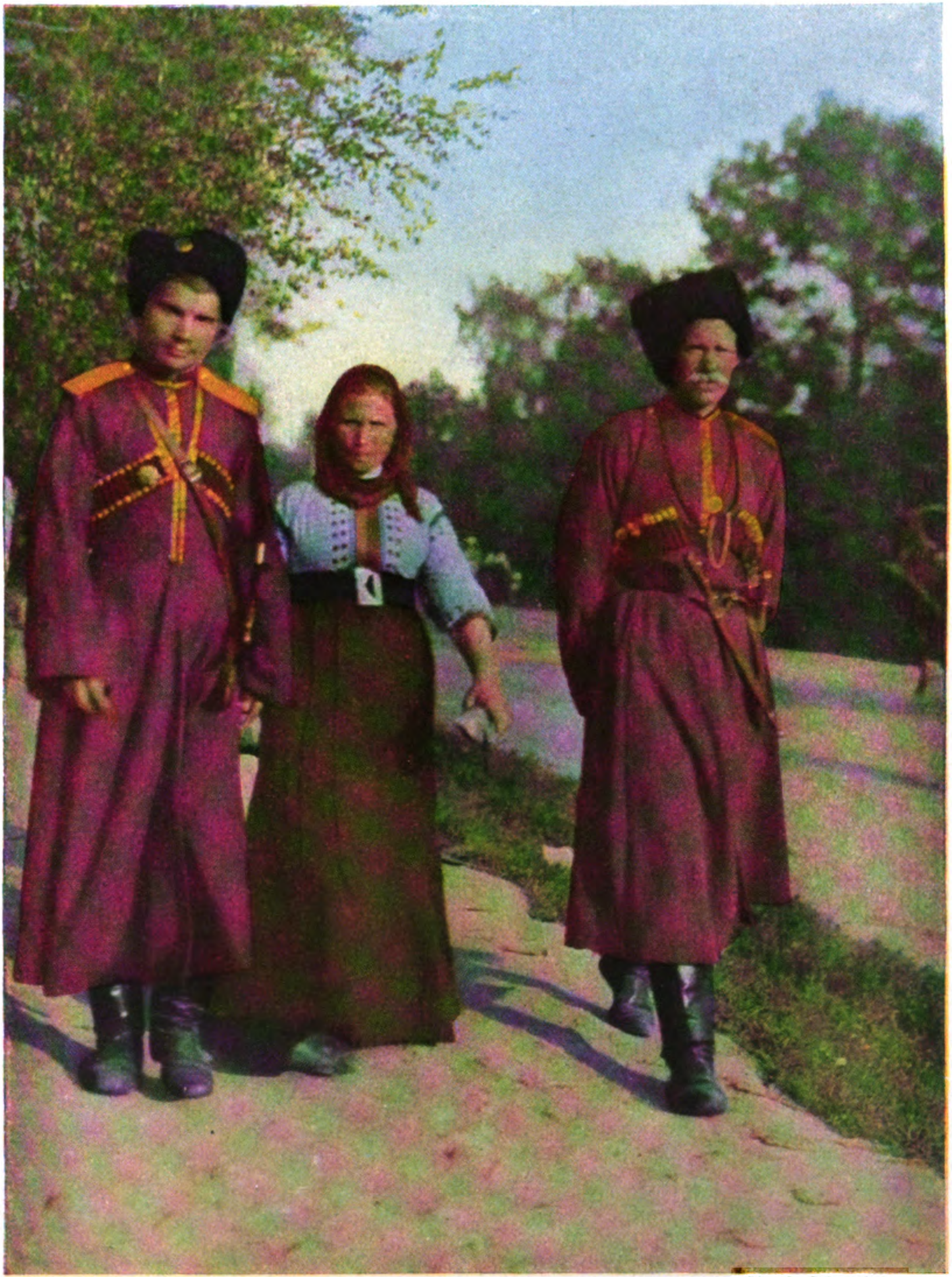


Photo by Gilbert H. Grosvenor

CIRCASSIANS PROMENADING IN THE PARK AT SPARROW HILL: MOSCOW

There are as many different races under the Russian flag as there are in the British Empire. These men are Circassians from the Caucasus Mountains east of the Black Sea. They come of a proud and fearless people, noted for their love of country, their chivalry and their splendid physique. Though few in number, they resisted subjugation for many years, and it was not until 1864 that the Russians finally subdued them. These men are wearing their picturesque racial costume, a richly colored robe, adorned with a belt of cartridges.

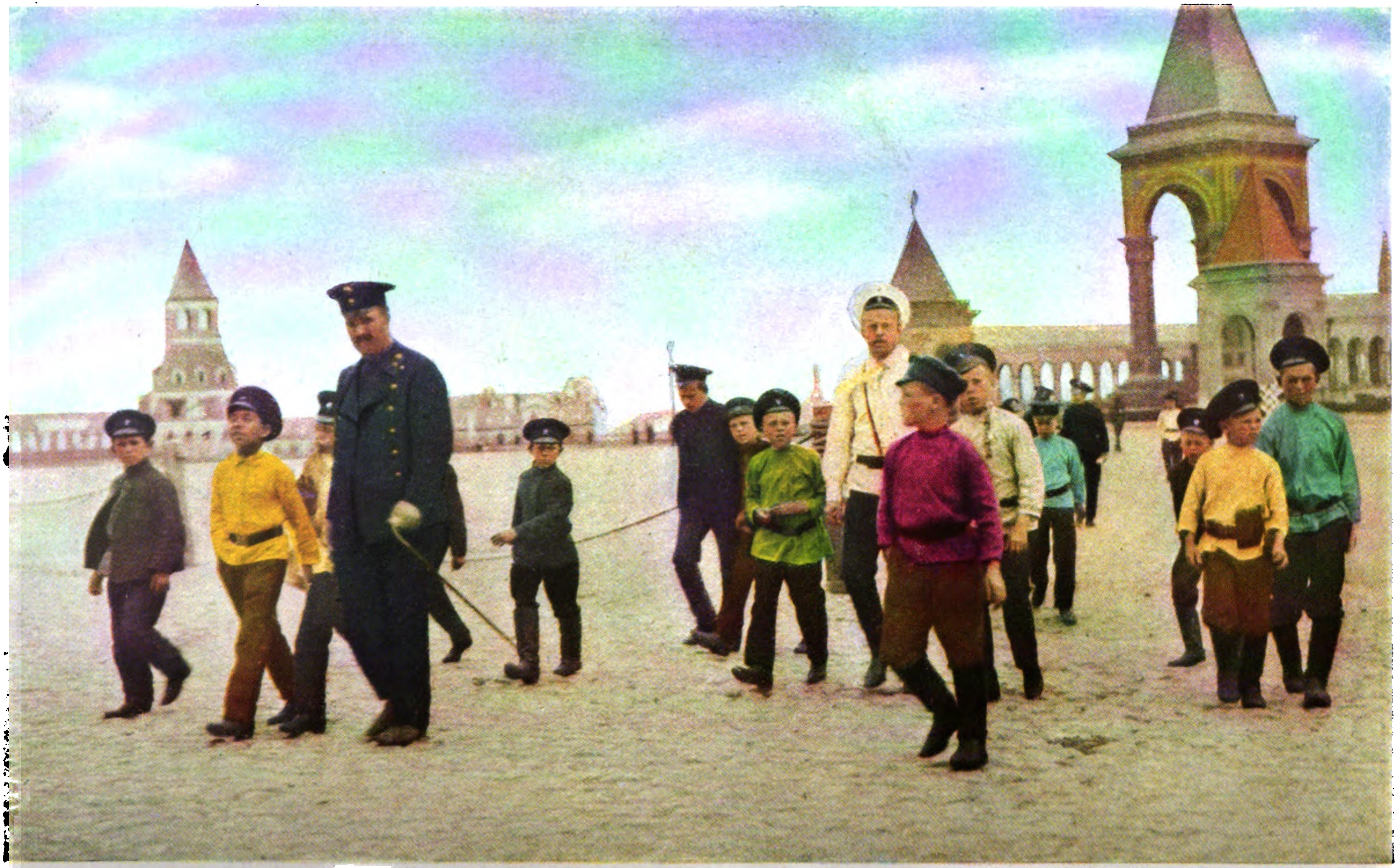


Photo by Gilbert H. Grosvenor

RUSSIAN BOYS VISITING THE GLORIES OF THE KREMLIN, MOSCOW

They are wearing the characteristic Russian blouse, which is gaily colored and the fashion for all males in Russia, young and old.

"Above Moscow there is nothing but the Kremlin, above the Kremlin nothing but the sky," runs a Russian saying. Here have come the Czars to their baptisms, their coronations, their marriages, and their burials. It is the stronghold of Imperial Moscow, a city within a city. Its Imperial Quarter comprises four or five squares, two palaces, a treasury, the seat of the military Governor, several monuments, three cathedrals, many churches and chapels, three convents, barracks, an arsenal, and a palace of justice.

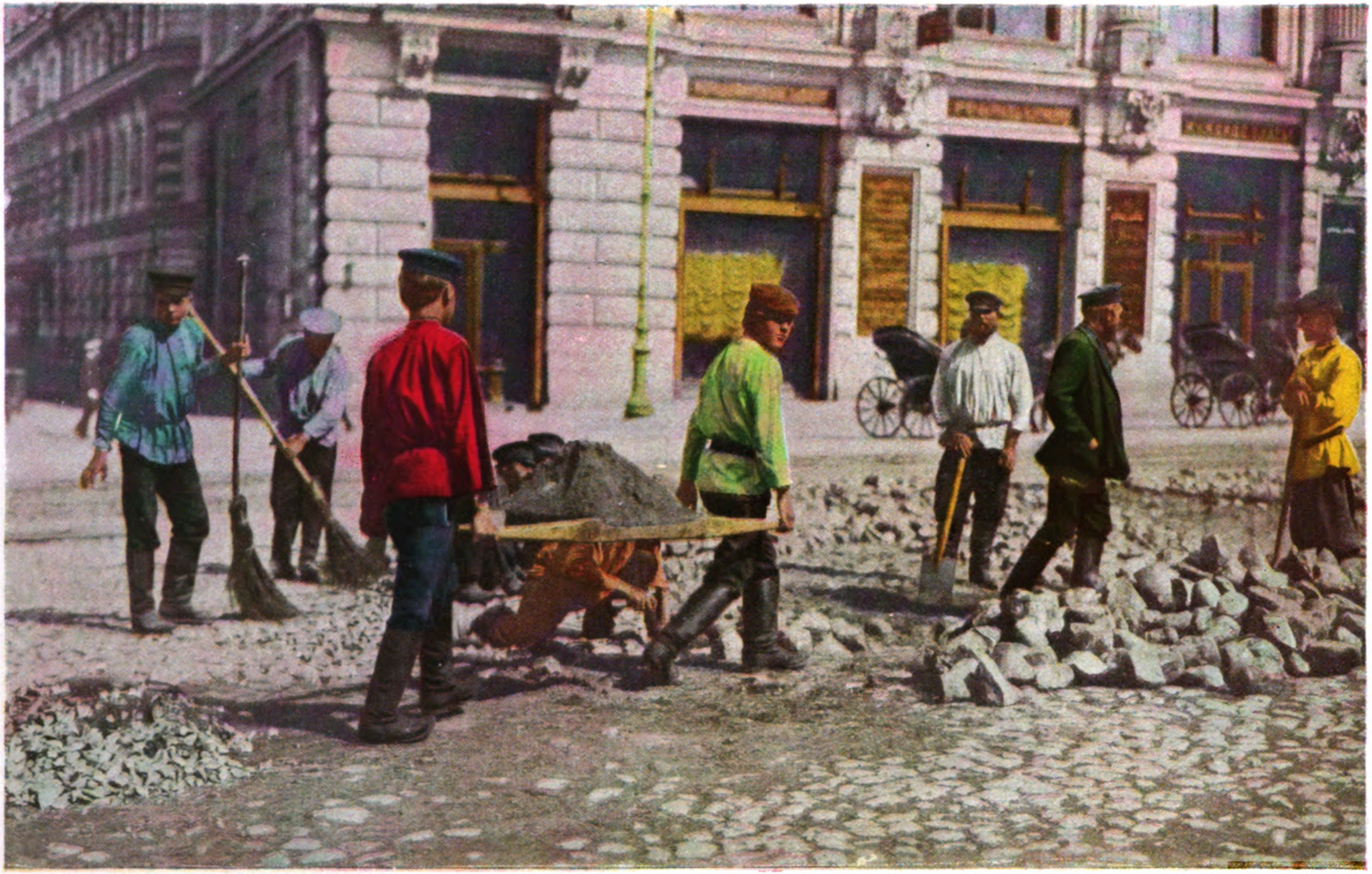


Photo by Gilbert H. Grosvenor

WORKMEN REPAIRING A PAVEMENT IN THE CITY OF MOSCOW

Laborers, instead of wearing the white uniform customary in our cities, wear the universal Russian blouse. These are usually gaily colored, bright red, yellow, blue, green, etc. The heavy boots, shown in the picture, while perhaps uncomfortable during the few days of summer heat, are very serviceable during the other months of the year, as Russian roads are notoriously poor.

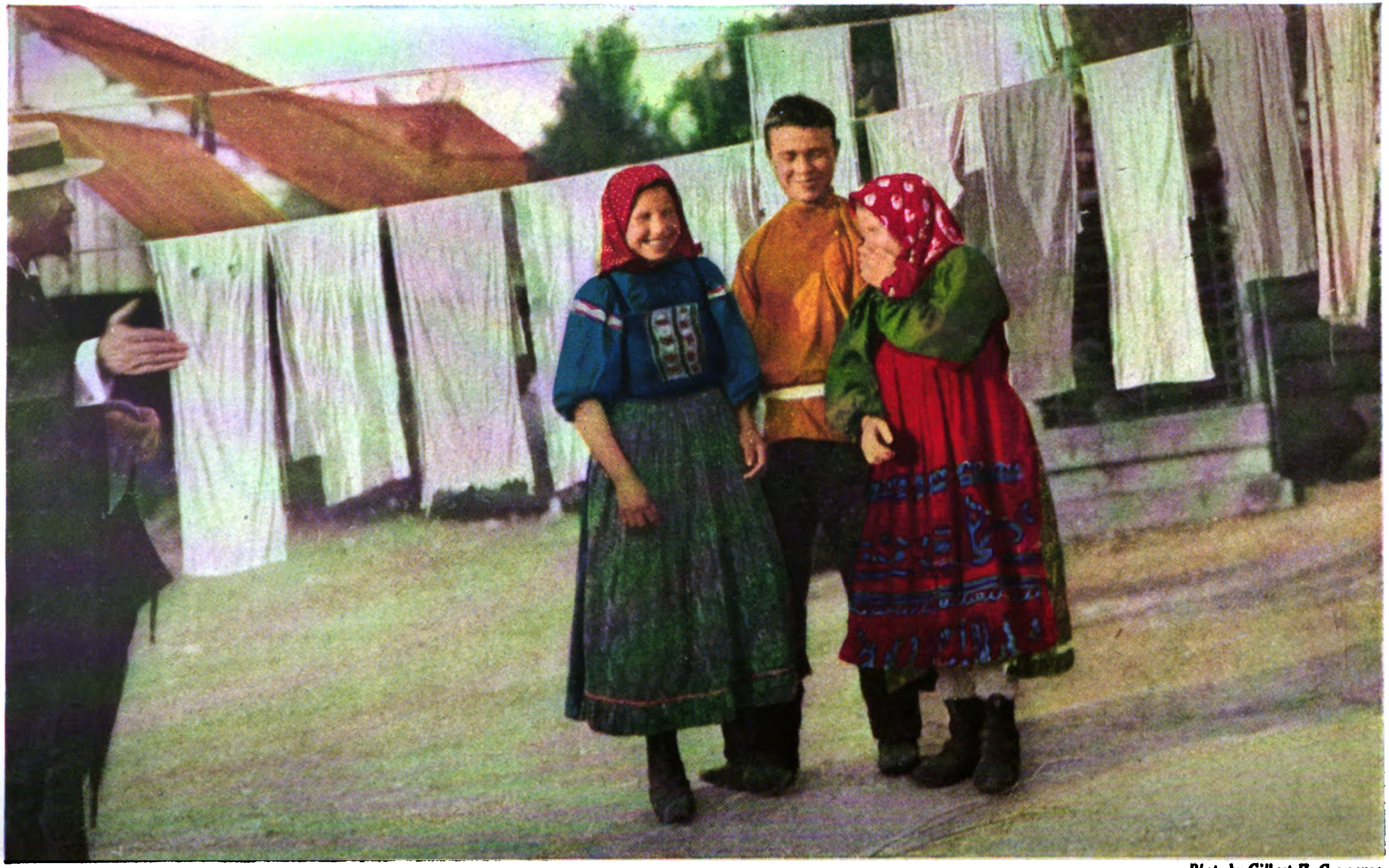


Photo by Gilbert H. Grosvenor

CAMERA-SHY BUT NOT ALTOGETHER UNWILLING

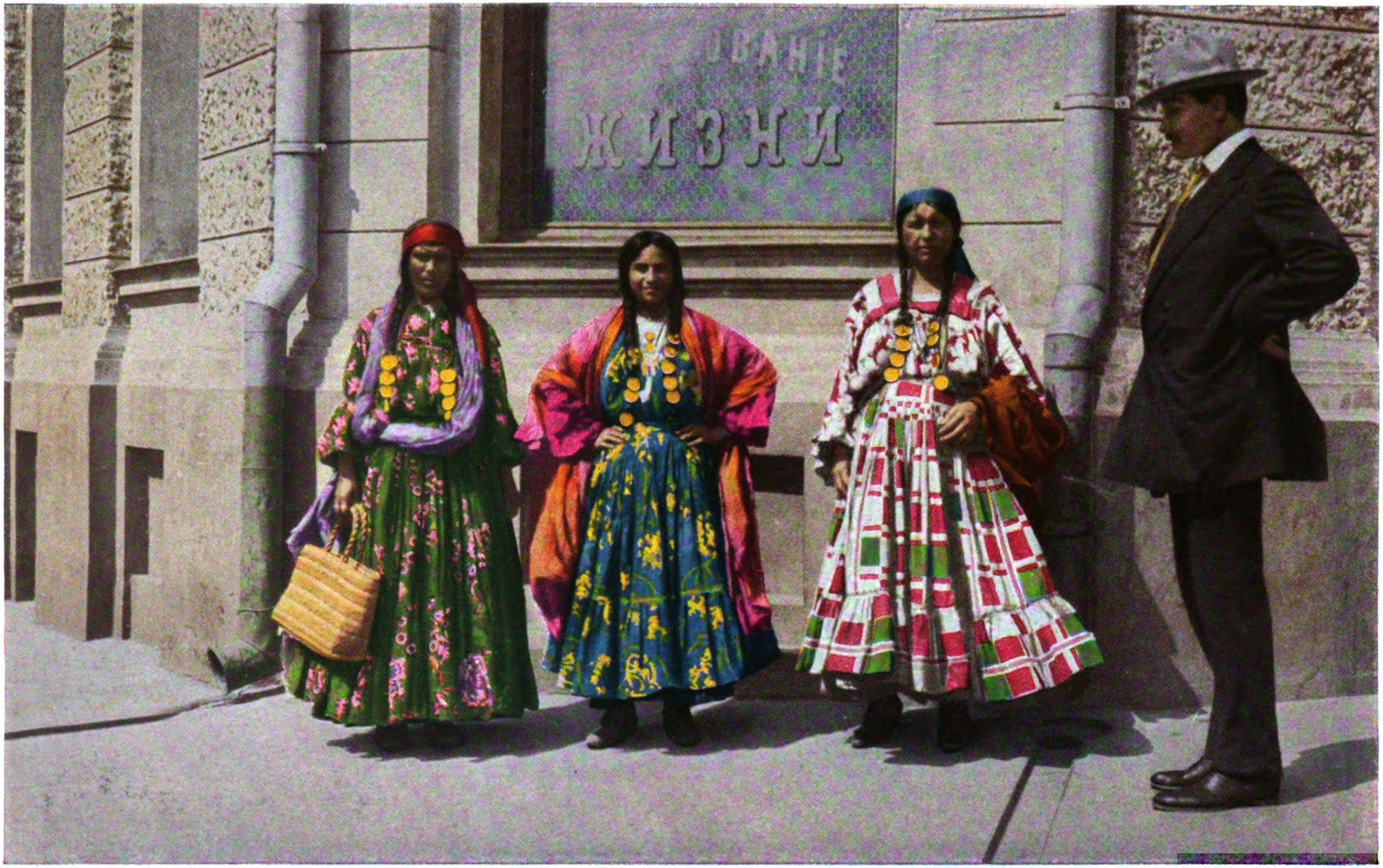


Photo by Gilbert H. Grosvenor

THREE GYPSIES ON THE STREETS OF MOSCOW

They are fond of extravagant colors, and, like all gypsies, wear necklaces of coins which have been heirlooms for many generations. Some of the old coins are worth many times their weight in gold.

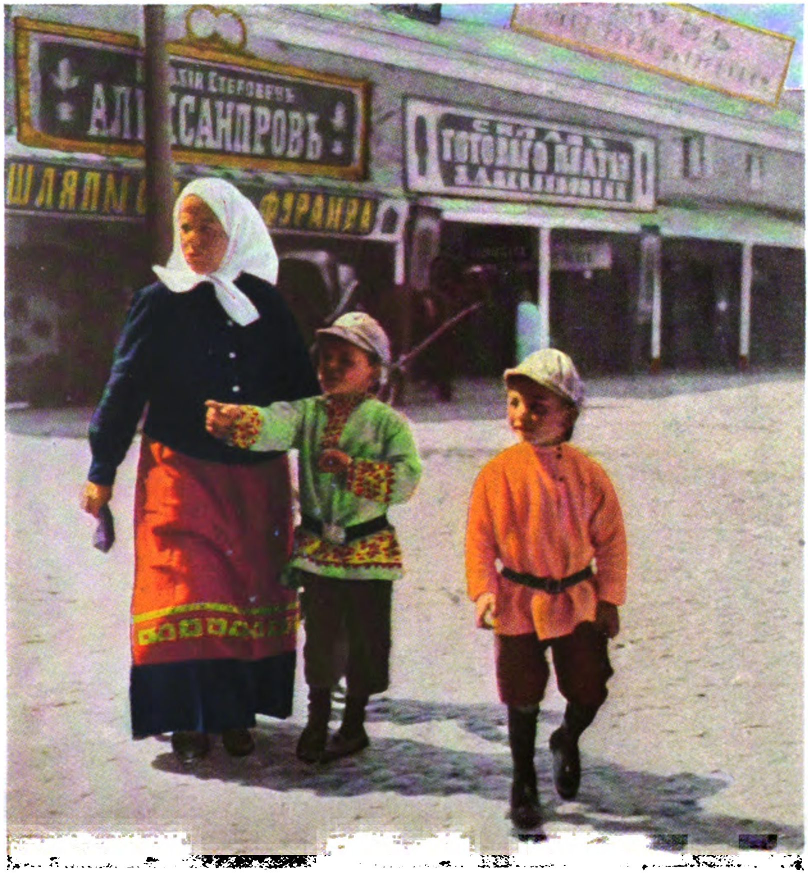


Photo by Gilbert H. Grosvenor

BOYS OF A WELL-TO-DO FAMILY IN THE STREETS OF NIZHNI NOVGOROD, IN WHICH CITY RUSSIA'S GREAT FAIR HAS BEEN HELD EACH YEAR SINCE 1817

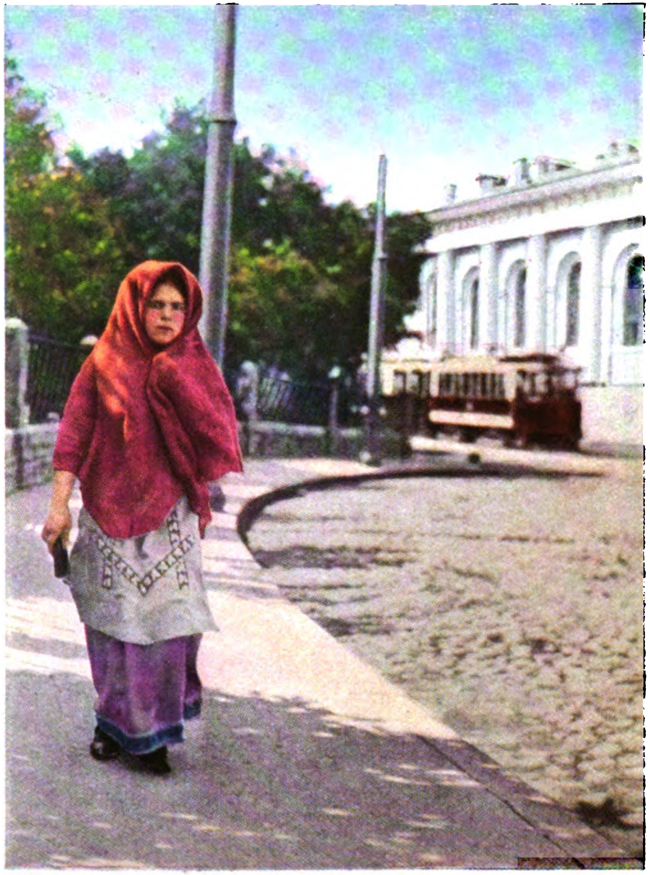


Photo by Gilbert H. Grosvenor

A RUSSIAN GIRL IN MOSCOW, WITH A GLIMPSE OF THE UNIVERSITY TO HER LEFT. THE SHAWL IS AS UBIQUITOUS HERE AS THE MANTILLA IN SPANISH-AMERICA. TO THE MASSES THE QUESTION OF MILLINERY IS PURELY ACADEMIC

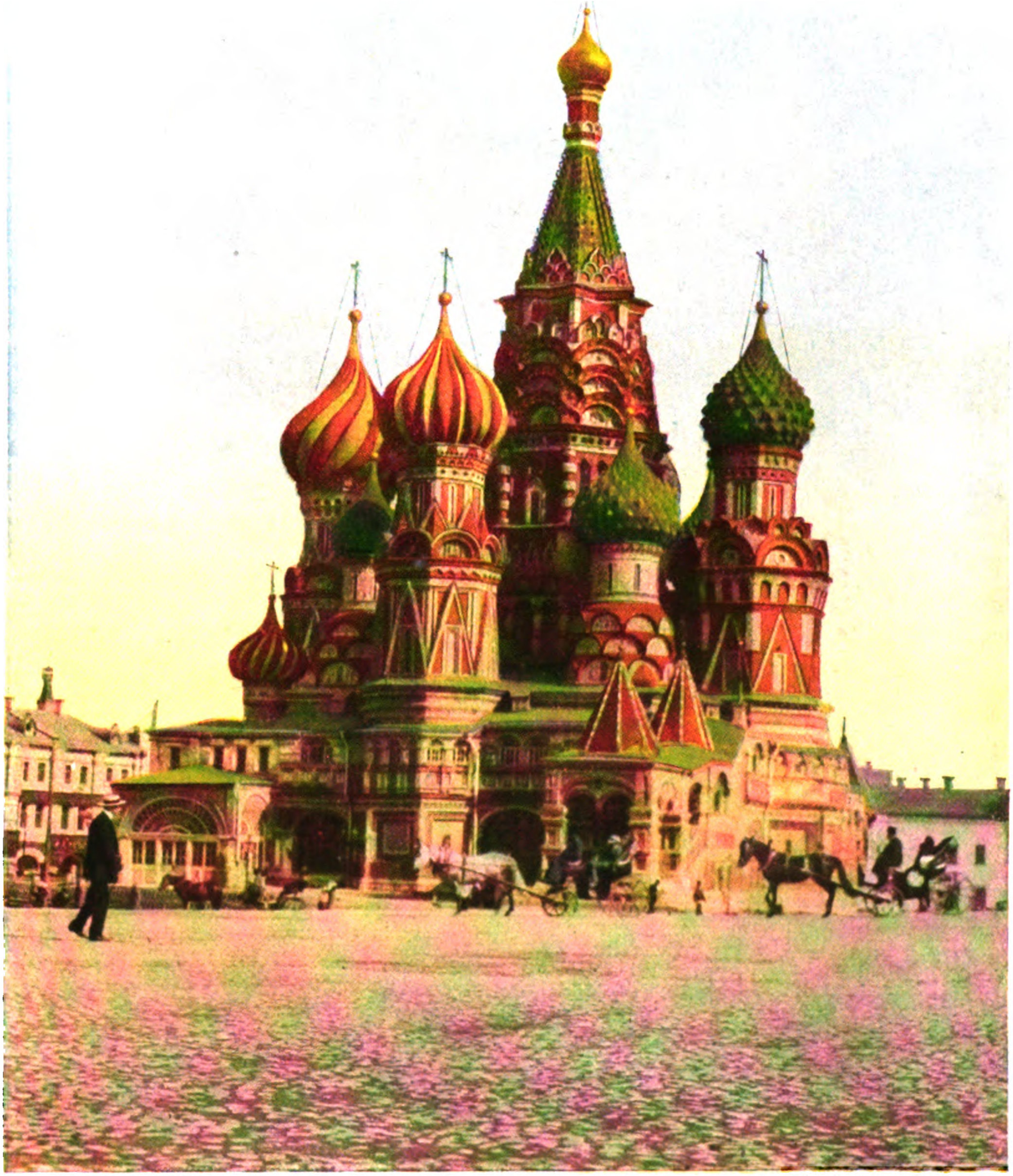
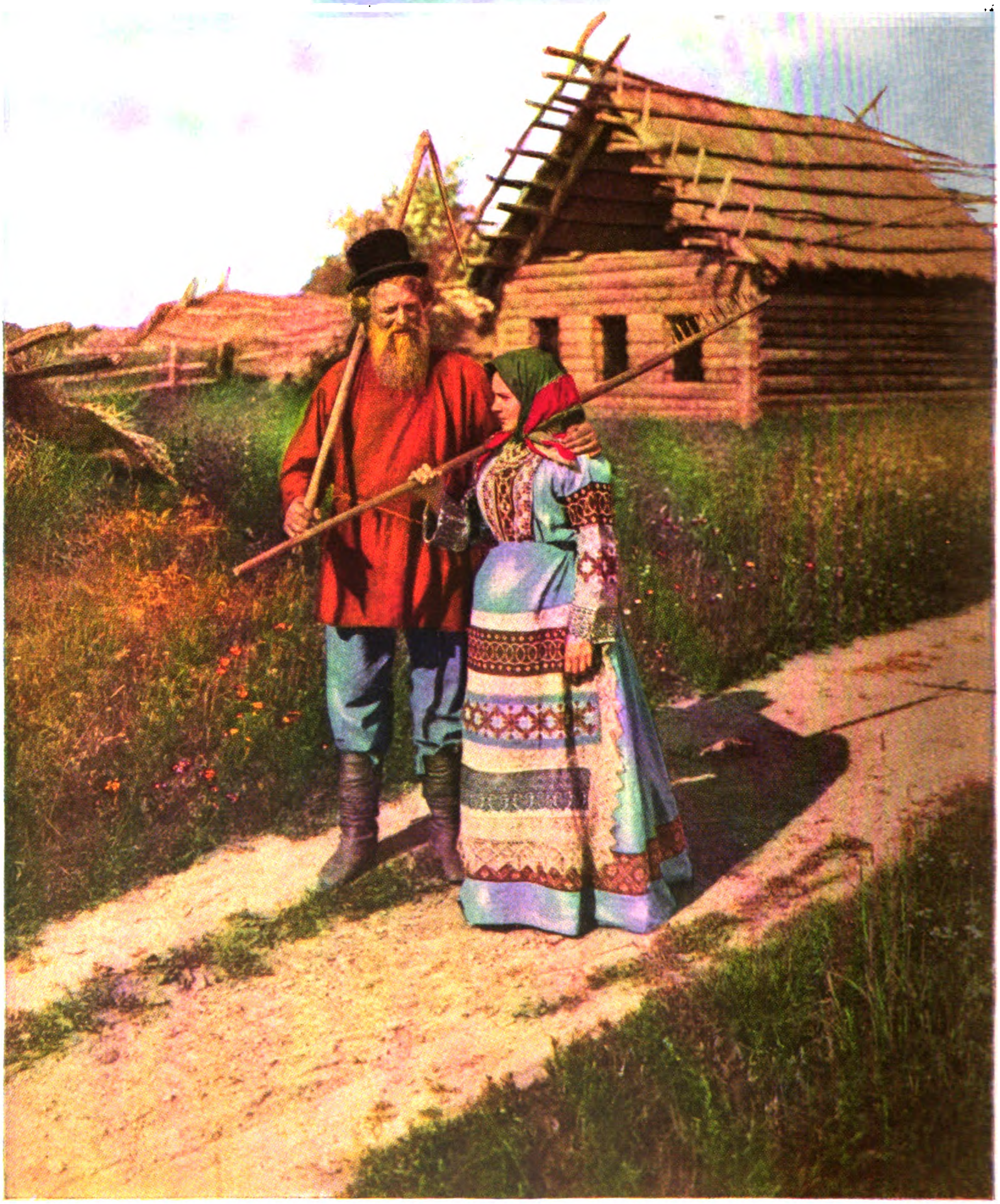


Photo by Gilbert H. Grosvenor

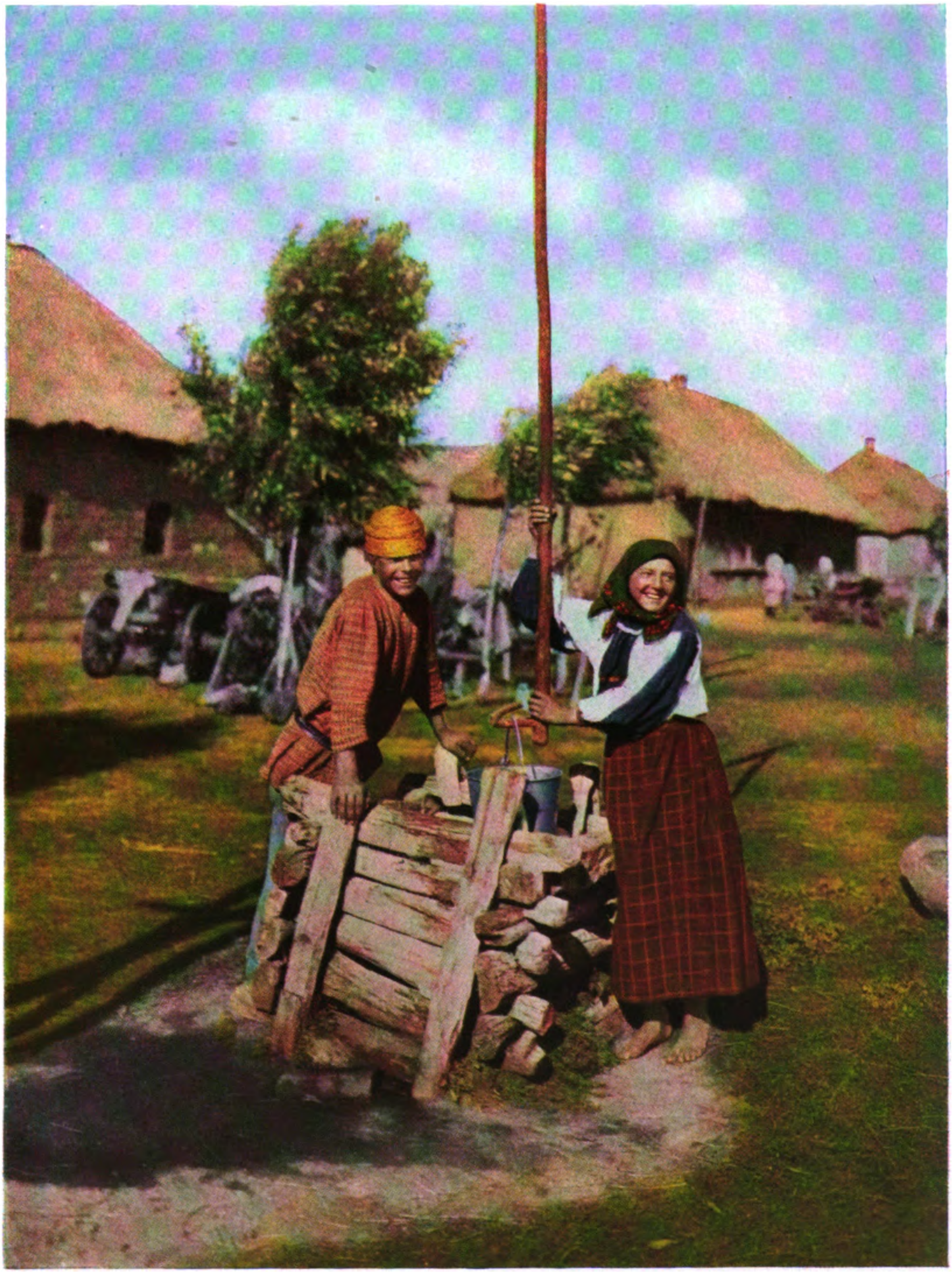
THE CATHEDRAL OF ST. BASIL'S: MOSCOW

St. Basil's is remarkable for its bizarre outlines and the gaudy color of its exterior. The interior is very disappointing, being divided into eleven small and gloomy chapels, which resemble dungeons. In this they are unlike the typical Russian church, which is elaborately adorned in gold and other rich colors.



FORTH TO THE HARVEST

In Russia one may see in the harvest fields women wearing needlework on their dresses that many an American society woman would be proud to possess. Between rearing the biggest families in the world, keeping house and lending a willing hand in the field when needed, the Russian peasant woman finds time in the long winters to express her love of the beautiful through a needle.



A RUSSIAN REBECCA AT THE WELL

This picture well typifies the pastoral civilization of peasant Russia. Nothing is bought by a peasant that he can fashion for himself, for rubles are few and far between with him. What little they buy is usually obtained in trade, and very many of them handle less money in a year than the average American workman handles in a day.

WHERE RACE SUICIDE HAS NEVER BEEN HEARD OF

The Russians are noted for their fecundity. In spite of the fact that the science of preventive medicine is a sealed book to the masses and their death-rate therefore very high, they still show a greater excess of births over deaths than any other leading country—with 17 per thousand of population, as compared with 11.3 in Germany; 10.1 in Italy; about 7.5 in the United States; and 0.9 in France. Without immigration, and in spite of emigration, the population has increased 90 per cent in forty years, which means that it will probably reach 267,000,000 by 1952.

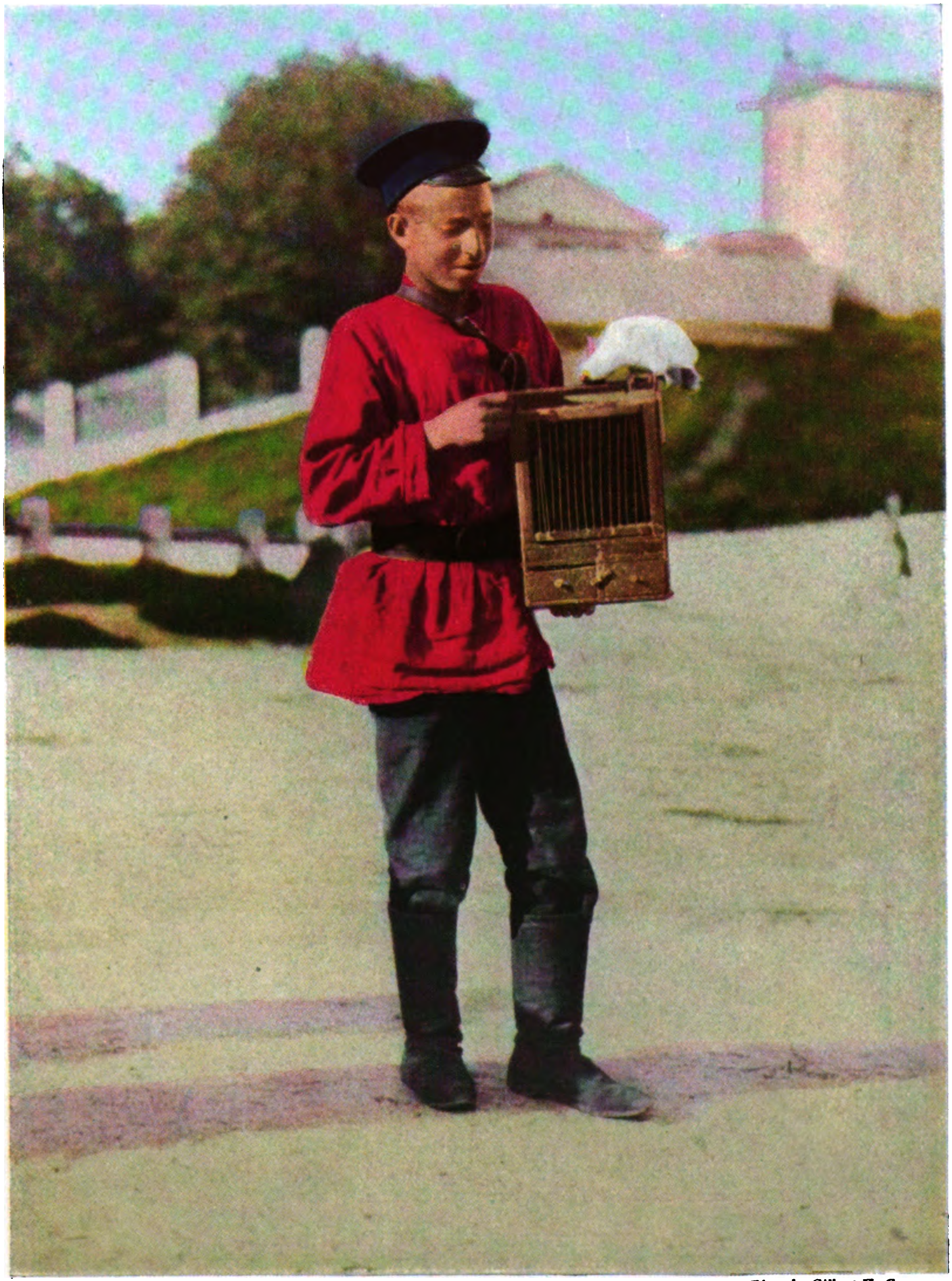
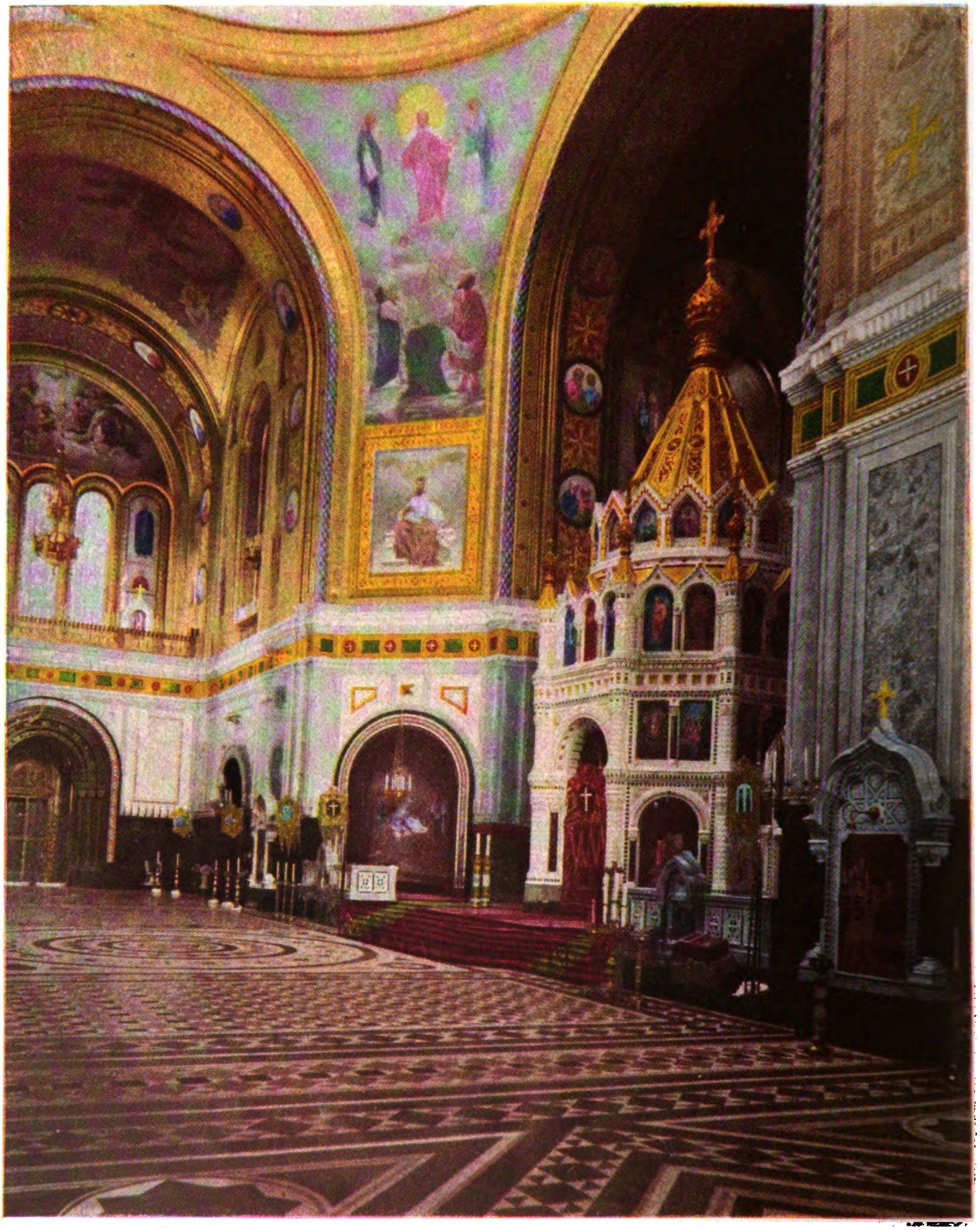


Photo by Gilbert H. Grosvenor

A FORTUNE TELLER AND HIS ASSISTANT, NIZHNI NOVGOROD



THE CATHEDRAL OF THE SAVIOR: MOSCOW

This great structure, erected as Moscow's thank-offering for her deliverance from Napoleon, and completed in 1883 at a cost of seven million dollars, is regarded by artists and architects alike as Russia's masterpiece in cathedral architecture. The effects obtained by the blending of red, white and grey marbles, with gold and gilt bronze, quite beggar description. Russia's greatest artists contributed to its mural decoration. There are no seats and no organ, and high and low, rich and poor stand alike throughout the service. Beyond the door of the consecrated chamber behind the altar no woman's foot may tread.

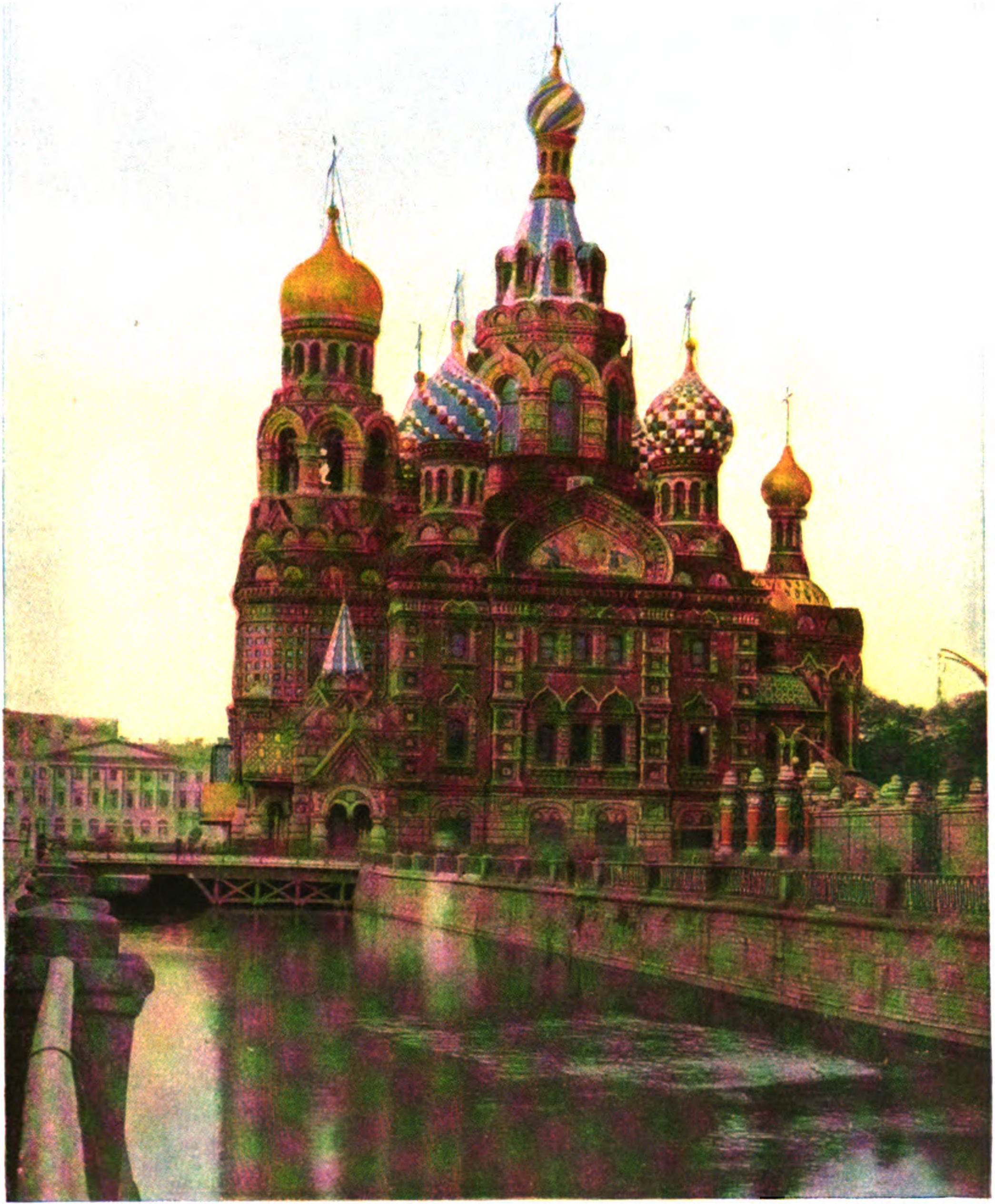
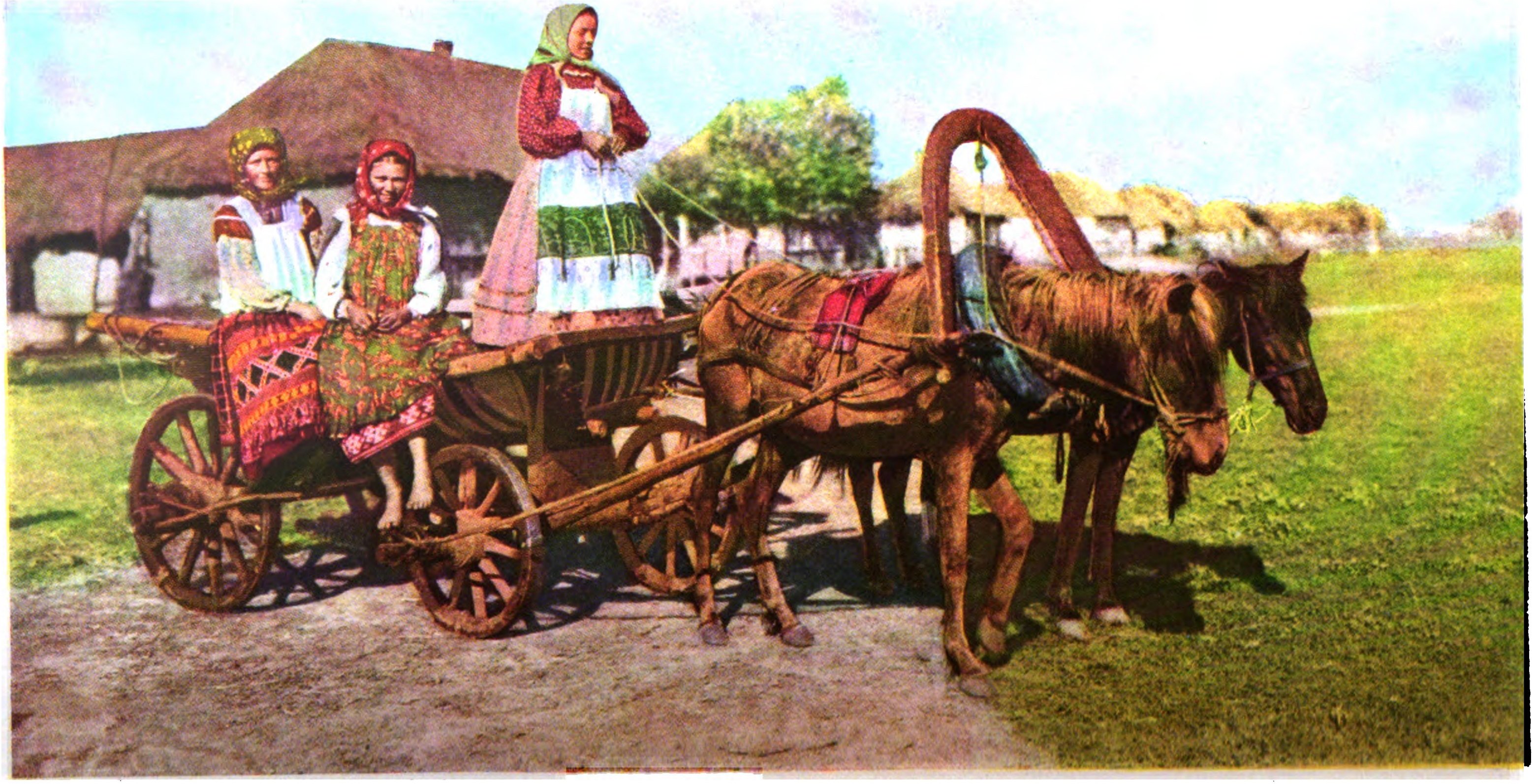


Photo by Gilbert H. Grosvenor

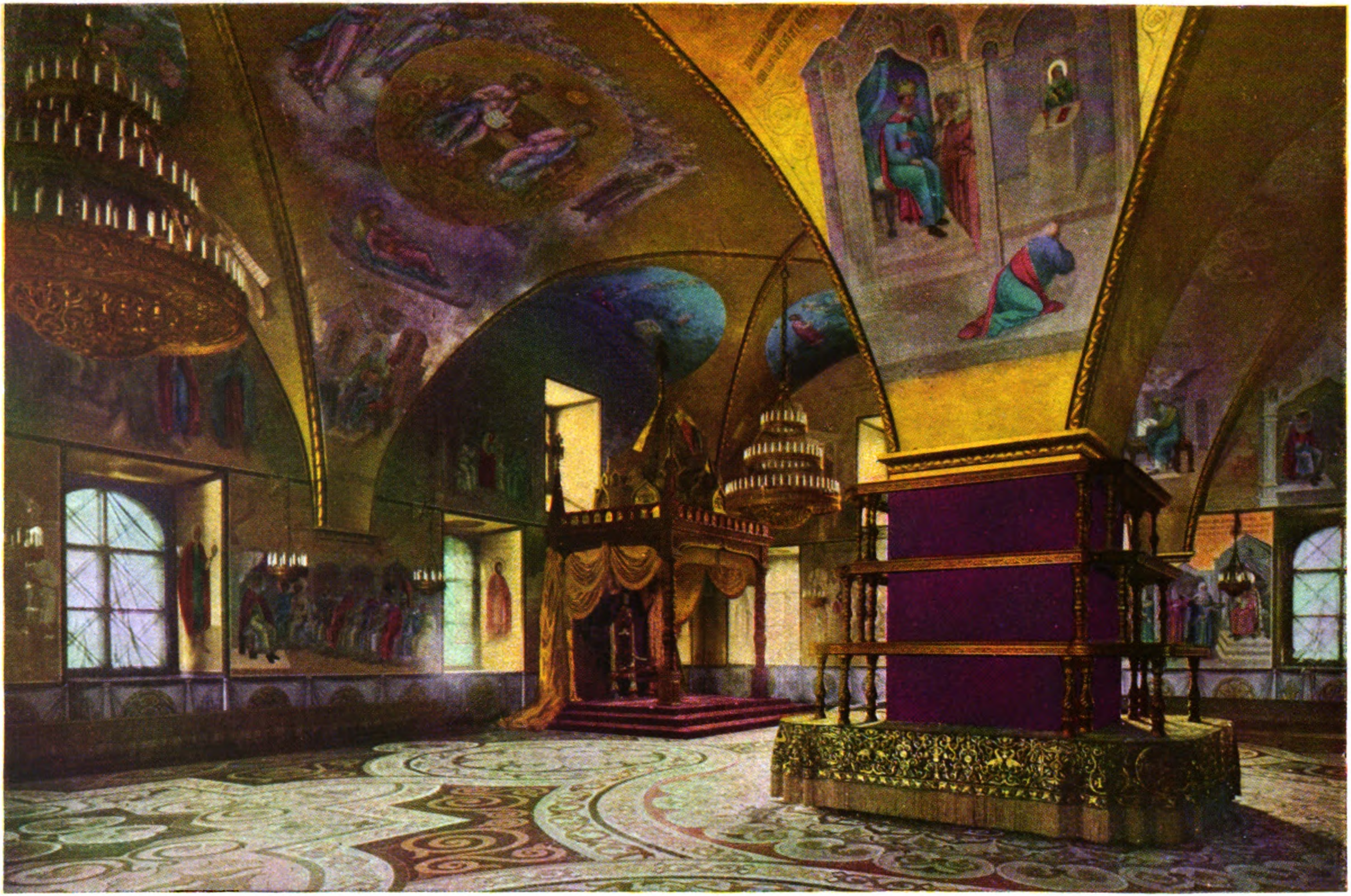
THE CHURCH OF THE RESURRECTION AT PETROGRAD

A magnificent edifice with wonderful, parti-colored minarets and an interior that has borrowed all of the priceless metals, gems and marbles for its beauty. It cost twenty million rubles (ten million dollars), contributed by the Russian people, to commemorate the murdered "Liberator of the Serfs and Friend of Finland," Alexander II. The church stands over the site where he was assassinated by a bomb-thrower in 1881.



A SMALL FARMER'S TEAM IN RUSSIA

The wagons and harness used by the Russian peasant farmer are rudely fashioned. The women work in the field as well as the men. The whole family, little and big, each must do his part toward keeping the wolf from the door.



THE THRONE ROOM IN THE OLD IMPERIAL PALACE: THE TEREM, IN THE KREMLIN, MOSCOW

The Terem dates from about 1626. It is a rather small palace of five stories all the rooms being decorated in gorgeous coloring.

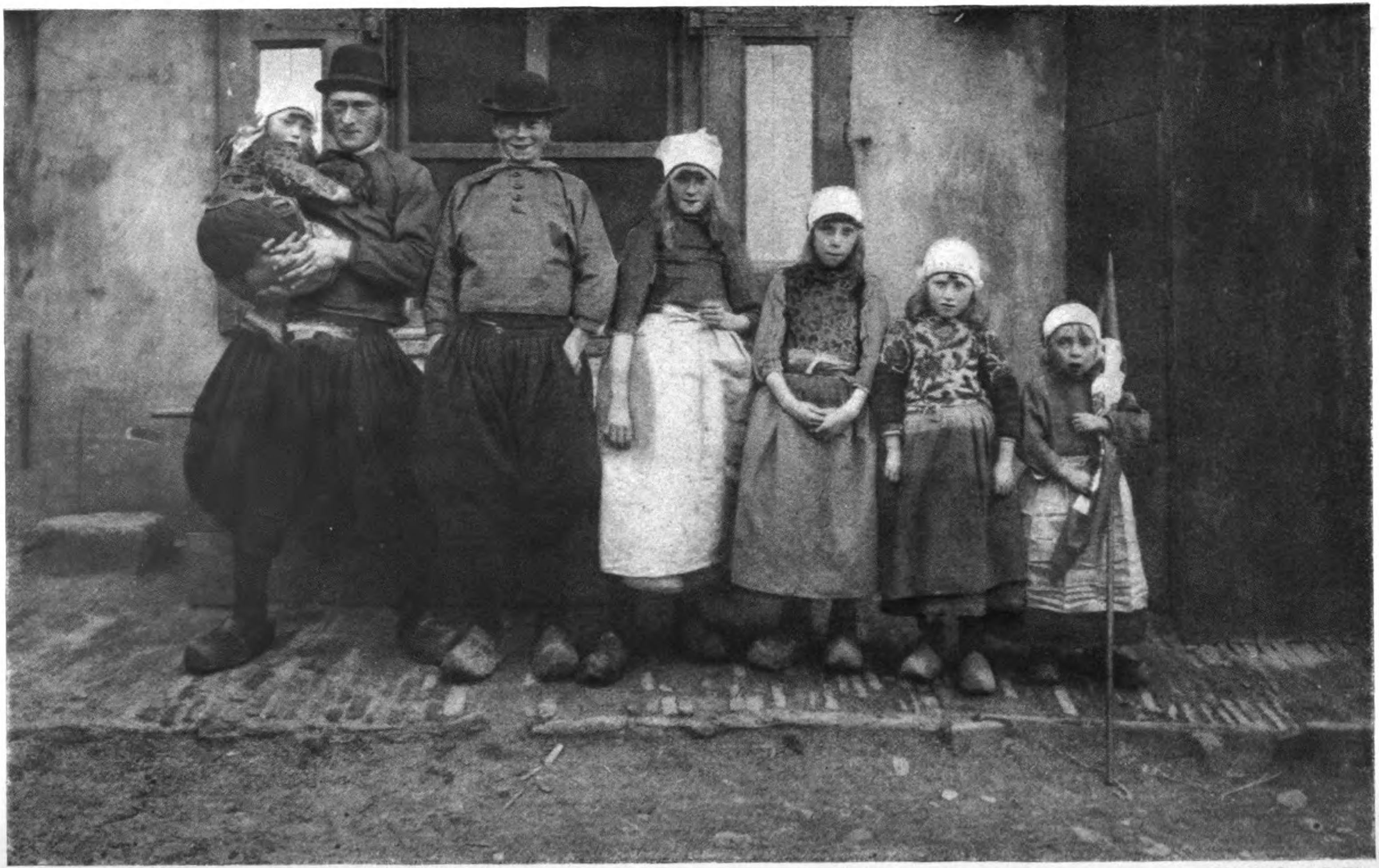


Photo by George R. King

A DUTCH FISHERMAN AND HIS FAMILY

On the island of Marken, in the Zuider Zee, the bloomer costumes of the adults, together with their wooden shoes and derby hats, have a rather ludicrous appearance. Their costumes differ somewhat from the dress of the mainland peasants.

lethargic Slav, say such authorities as Samuel Wilkinson.

A PROHIBITION NATION

The abolition of the sale of intoxicants in Russia represents the greatest prohibition victory of the age. With one dash of the pen one-sixth of the earth's surface and one-tenth of its population went "dry." Heretofore vodka-drinking has been the curse of the Russian masses. Being a government monopoly, the officials of the government encouraged the sale of vodka, and the constantly and rapidly growing revenues from that source showed that they did so with success.

Then the war came on. Realizing that a drunken soldier can never be a good soldier, the Tsar prohibited the sale of vodka temporarily and inhibited his troops from using intoxicants in any form.

Over night hundreds of thousands of government dram shops were closed. The response of the Russian people to this order was one of the surprises of Russian history. Everywhere it was received with acclaim, and there were such widespread and universal evidence of the approval of the government's stand in the matter that it soon became evident to the Tsar that what he had intended as a temporary measure could be made permanent.

The result was that Tsar Nicholas has answered a petition of the Russian Christian Temperance Society, presented by the Grand Duke Constantine, by saying:

"I have decided to prohibit forever the government sale of alcohol."

And so prohibition, the Russians hope, has come to a great Empire that probably more than any other in history has suffered from the evils of intemperance.

RUSSIAN SHRINES AND CHURCHES

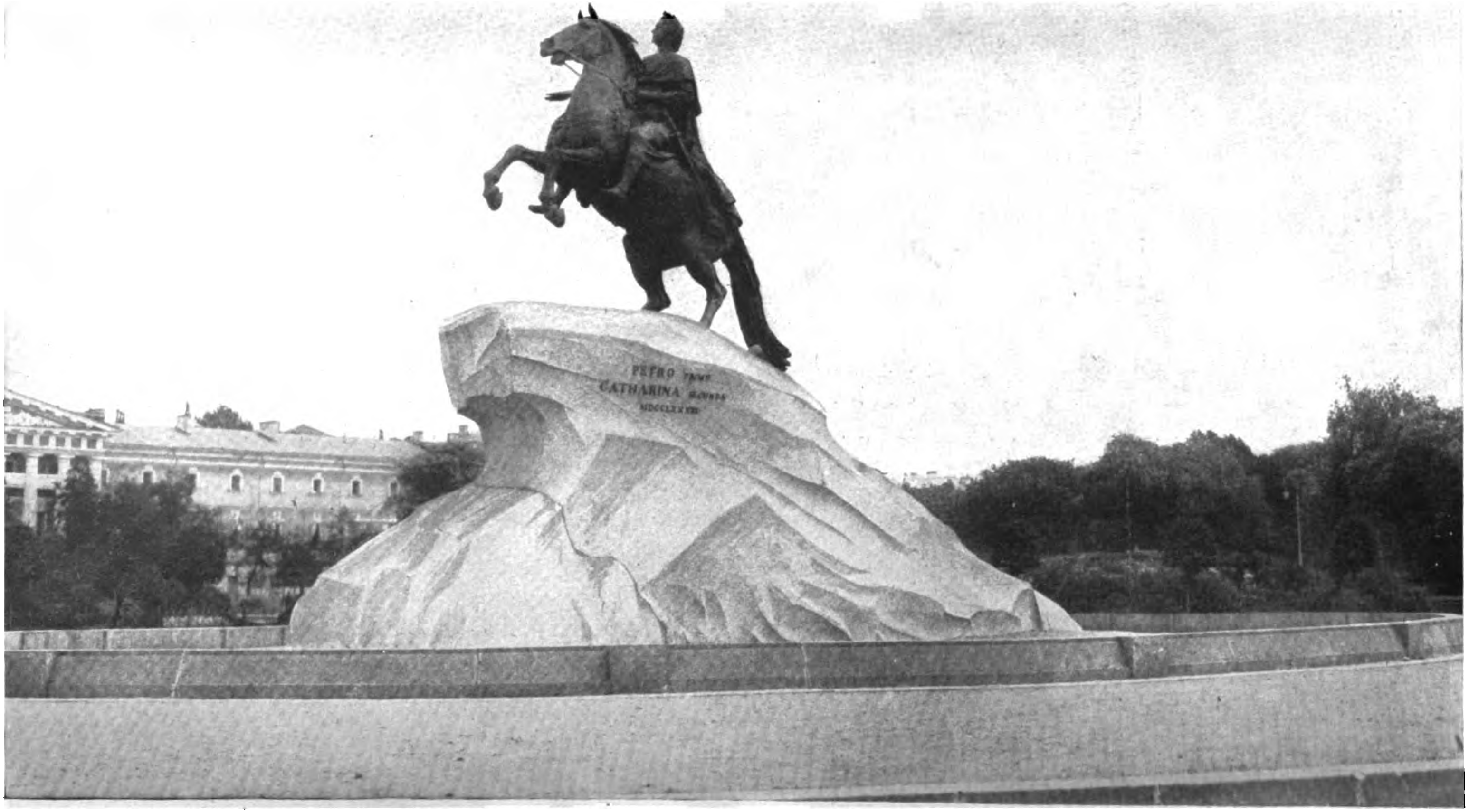
Whoever has been so fortunate as to visit Russia can never forget her wonderful church music and numberless shrines. Three of her imposing cathedrals are pictured in this Magazine—pages 469, 499, and 508—and are doubly interesting because they show what modern art can do. Being built on the lines of the Greek rather than the Roman cross, the interior is wider in proportion to the length than is permitted by the design of western cathedrals, and this added width gives the Russian edifice an impressiveness all its own.

We had seen the famous cathedrals of Europe—the noted structures of France, Germany, England, Italy, and Sancta Sophia, in Constantinople—but were utterly unprepared for the splendor and brilliancy of St. Isaac's at Petrograd! Pillars 30 feet high of lapis lazuli and malachite, altar rails of solid silver! containing half a ton of this precious metal; icons of pearls, studded with huge diamonds, sapphires, emeralds, and rubies!

And then added to the appeal to the eye is the appeal to the other senses. The ear is charmed by the beauty of the voices of priests and deacons rising in waves of sound to the responses of the service. No instrumental music distracts the attention from the human voice. And so beautiful is the singing that one does not miss the organ. The singing, incense, the lights of many candles, the gorgeously-robed priests and deacons, passing in and out against the golden background, all make an irresistible appeal to the emotions.

The icons are the symbols of the saints and of God. In every Russian home, in every room in your hotel, in the railway waiting-rooms, everywhere there is an icon. It is not proper to sit with one's back to it. It consecrates the home, and is a reminder to the Russian that "God is in the midst"—not locked up in the church, but always present. The representations of Christ, of angels, and of saints are given in relief or mosaic or are painted.

The pictures accompanying this article, showing peasant and gentleman at devotion—pages 427, 433, 441, 443, 467, and 477—are actual snapshots. None of them were posed or planned; similar scenes may be seen every moment everywhere in Russia. His religion is very real to the Russian, and his God is really omnipresent to him; he sees His Spirit everywhere, and everywhere acknowledges it with the sign of the cross and



STATUE OF PETER THE GREAT: PETROGRAD

Photo by Gilbert H. Grosvenor

This is one of the most notable of all the world's great equestrian statues. The great stone base is an enormous boulder as large as a medium-sized house, and was brought from the Gulf of Finland, eight miles away, on a specially constructed railway, and over a specially built bridge across the Neva. The horse is treading on an adder and its tail sweeps the serpent's body. This assists a 10,000-pound counterweight in maintaining the equipoise of the horse (see page 442).

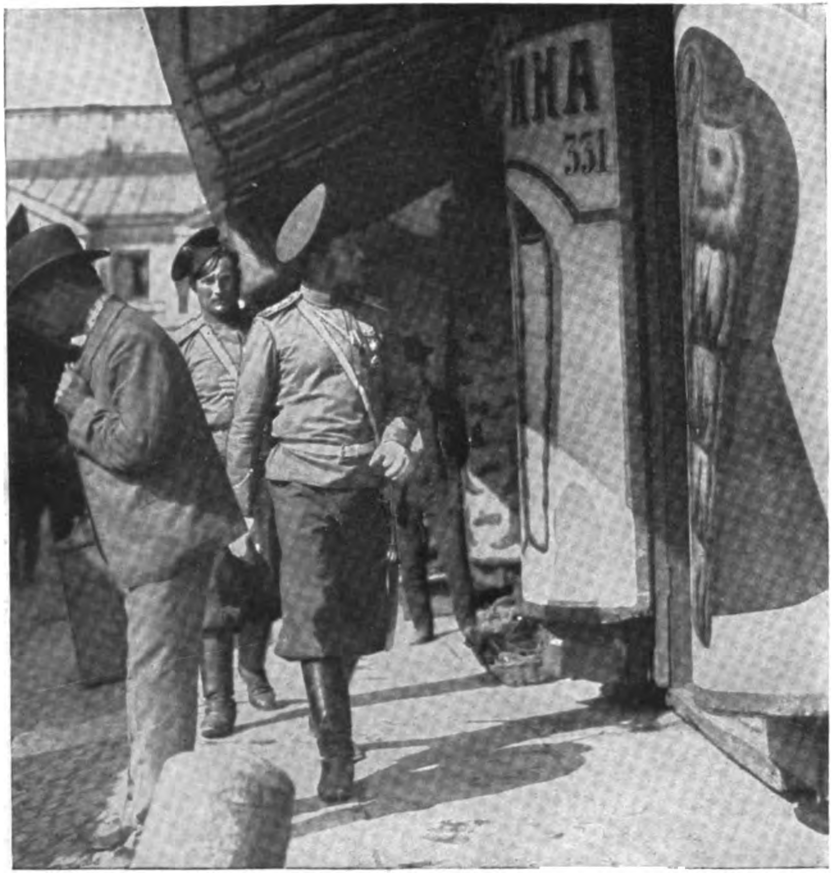


Photo by Gilbert H. Grosvenor

TWO RUSSIAN SOLDIERS IN THE FUR MARKET: PETROGRAD

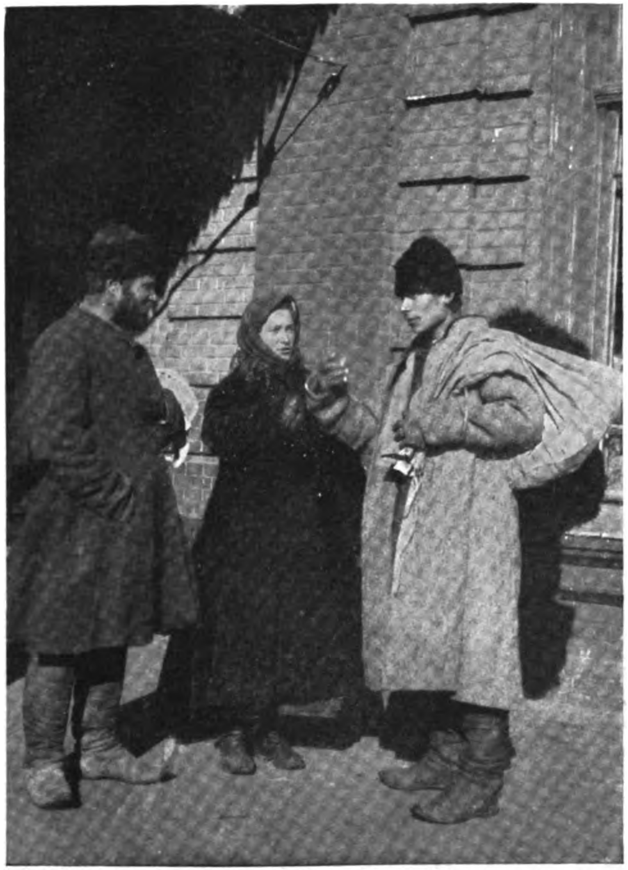
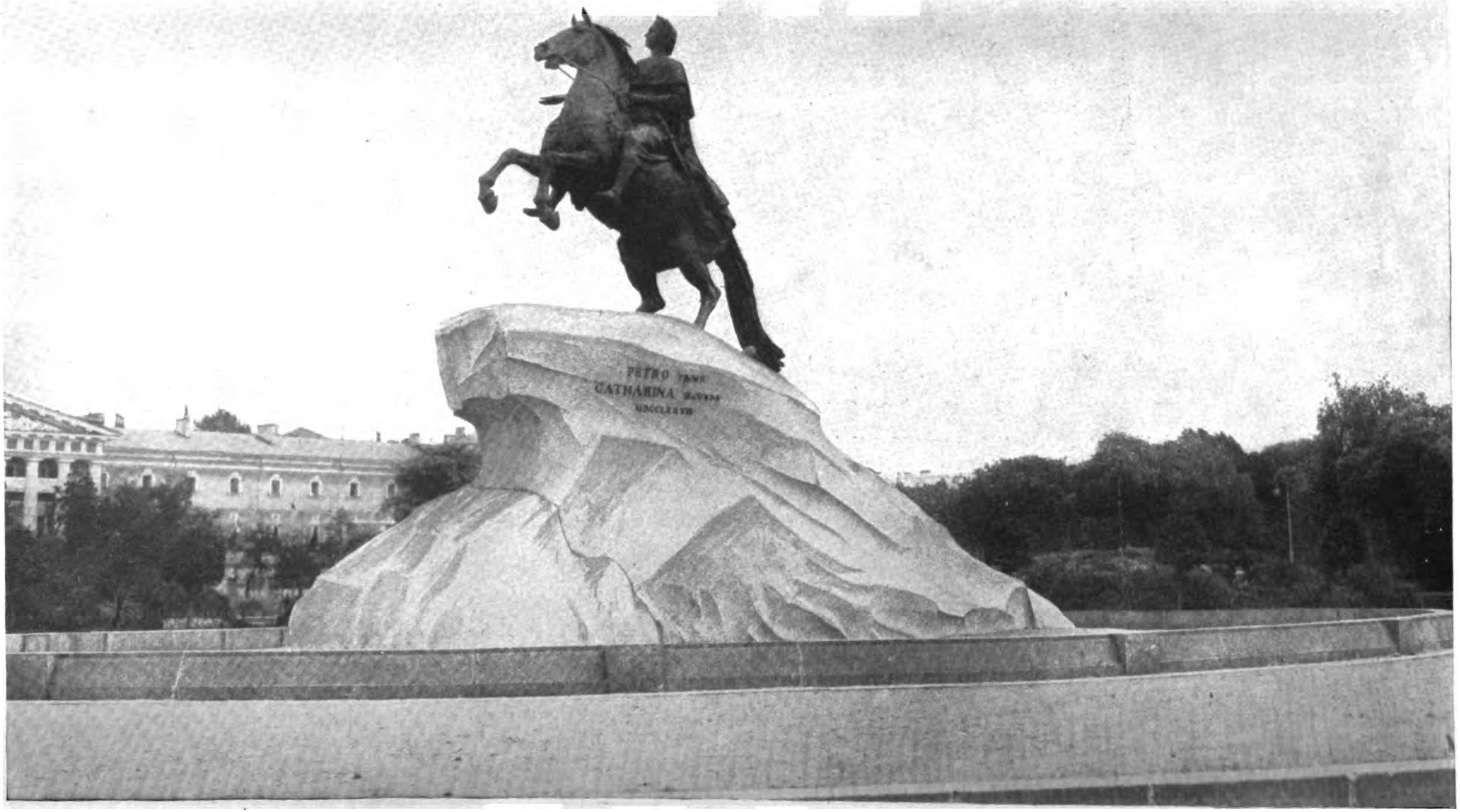


Photo by John B. Jackson

NATIVES OF BAKU, RUSSIA

Baku is one of the chief depots for trade between Russia and Persia. Some of the largest oil refineries in the Empire are located here, the wells of the Apsheron Peninsula being like those of the Gulf of Mexico region.



STATUE OF PETER THE GREAT: PETROGRAD

Photo by Gilbert H. Grosvenor

This is one of the most notable of all the world's great equestrian statues. The great stone base is an enormous boulder as large as a medium-sized house, and was brought from the Gulf of Finland, eight miles away, on a specially constructed railway, and over a specially built bridge across the Neva. The horse is treading on an adder and its tail sweeps the serpent's body. This assists a 10,000-pound counterweight in maintaining the equipoise of the horse (see page 442).

Photo by Gilbert H. Grosvenor

TWO RUSSIAN SOLDIERS IN THE FUR MARKET: PETROGRAD

Photo by John B. Jackson

NATIVES OF BAKU, RUSSIA

Baku is one of the chief depots for trade between Russia and Persia. Some of the largest oil refineries in the Empire are located here, the wells of the Apsheron Peninsula being like those of the Gulf of Mexico region.

Photo and copyright by International News Service

RUSSIAN RESERVES PROCEEDING TO JOIN THE COLORS AT PETROGRAD

The almost inexhaustible supply of men Russia has available for war may be shown by a few figures. Approximately two-ninths of the population of the United States is made up of men between the ages of 18 and 44, inclusive. Applying that ratio to Russia—and Russia has a larger proportional male population than we have—the result is 38,000,000 men of military age. Nor is that all. The annual crop of boys reaching the age of 18 years approximates 1,400,000.

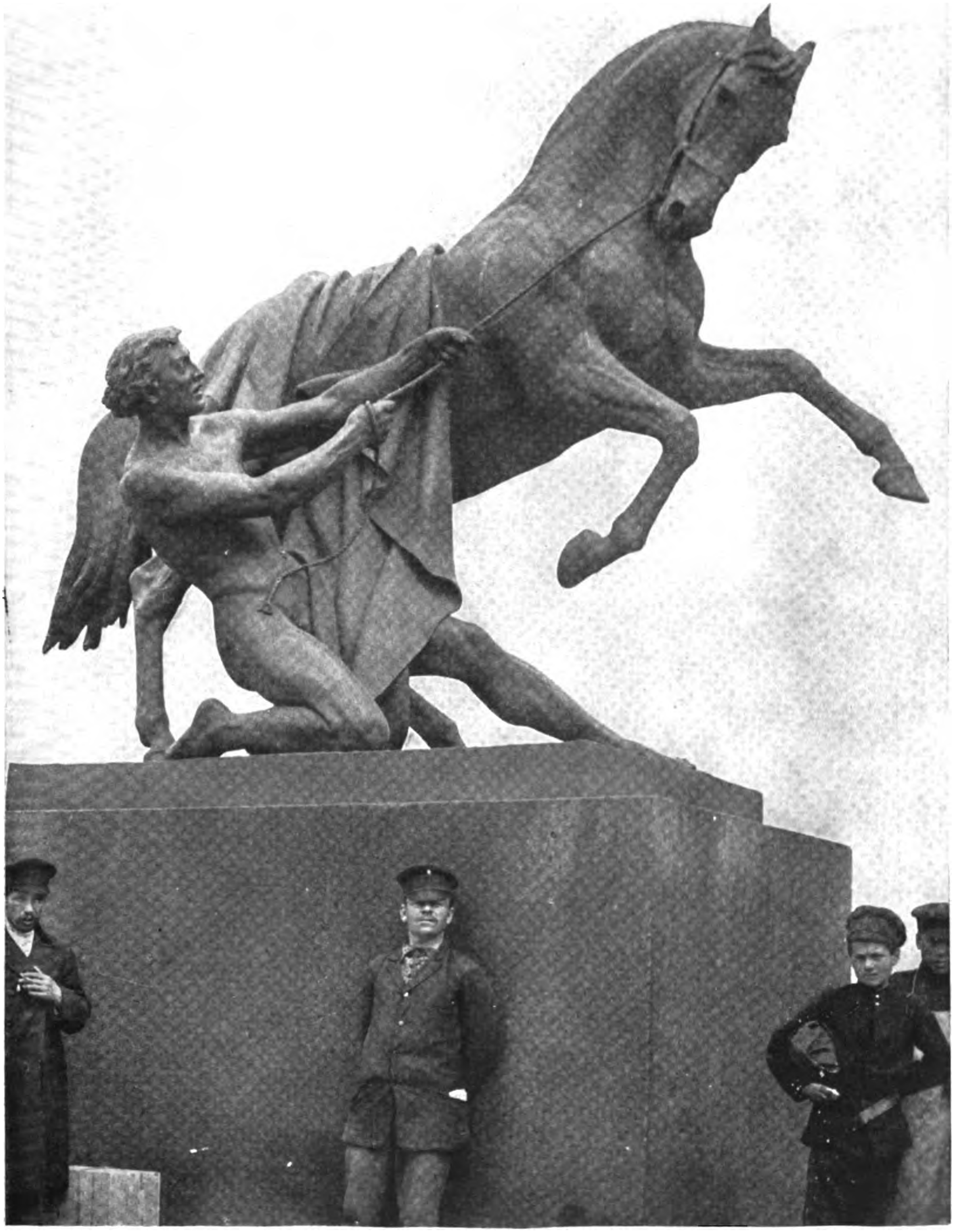
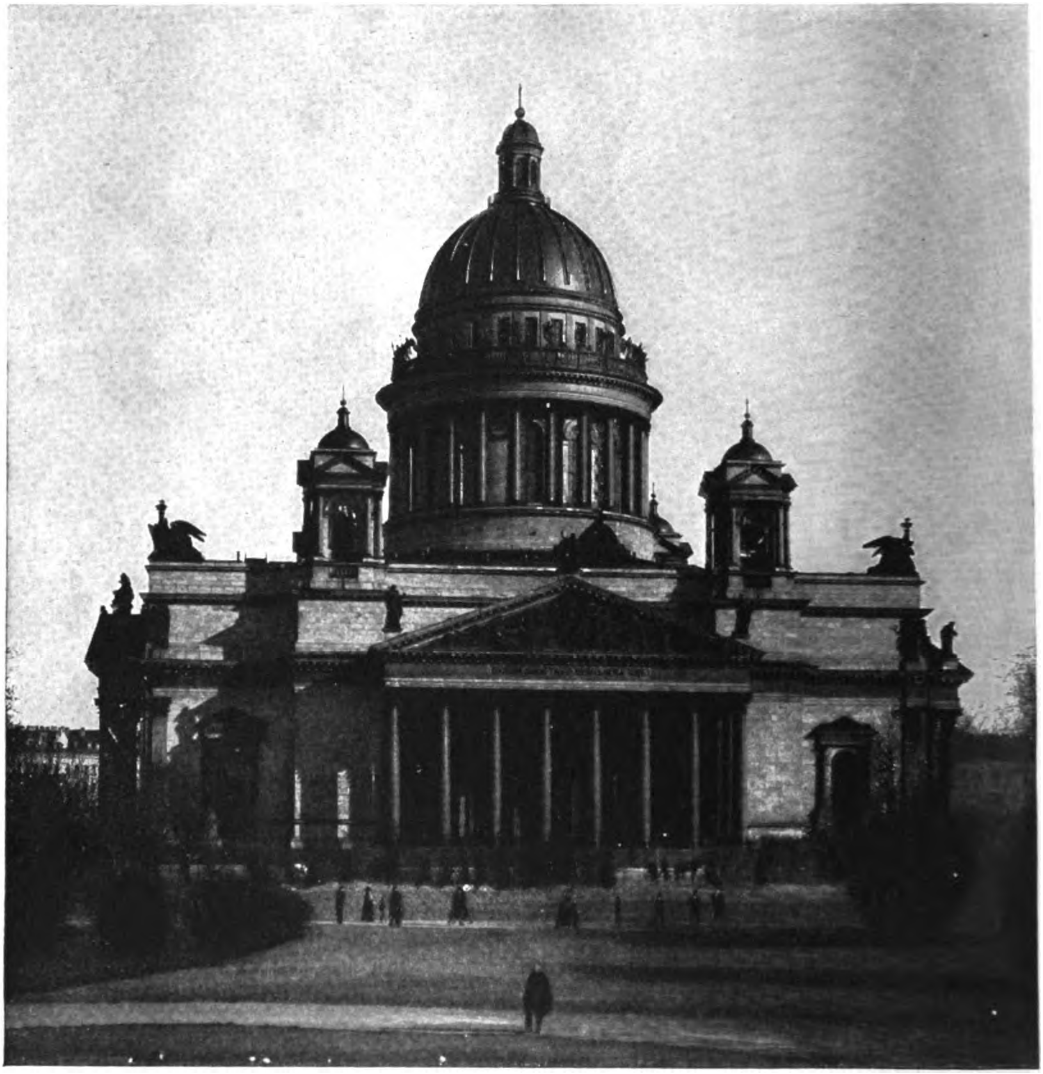


Photo and copyright by Underwood & Underwood

ALLEGORICAL STATUE, MAN CONQUERING THE BRUTE: FONTANKA BRIDGE, PETROGRAD, RUSSIA

The visitor to Russia admires the virile statues and monuments in Petrograd and Moscow. Usually these are the work of Russian artists, who are very successful in expressing action and power (see also page 424). For achievements in music, literature, sculpture, and painting during the past century few people excel the Russians. The fame of Tolstoi, Turgeniev, Vereshchagin, and many others is world-wide.



THE CATHEDRAL OF ST. ISAAC'S AT PETROGRAD

When the bleak north turns luxurious it can devise splendors to rival those of India, as Petrograd's magnificent cathedral well establishes. St. Isaac's, a huge pile in the form of a Greek cross, of granite blocks and bronze entableture without, a bewilderment of richest marbles within, columns of lapislazuli and exquisite jade, panels of malachite, sanctuaries in snowy and colored marbles, profuse with the works of artists, among them the sculptor Vitali, a prodigal marvel of bronze, marble, gold, and silver, is the peerless church of the Tsar's capital. The interior decorations cost more than twenty million dollars (see p. 503).

Nearly a thousand years had passed since the birth of Christ before the Russian Slavs were converted to Christianity. Already the English, the Franks, and the Germans had been Christians for some centuries, when, in 987, Prince Vladimir sent envoys to study the religions of the various neighboring nations whose representatives had been urging him to embrace their respective faiths. Nestor describes their report in amusing terms. Of the Mussulmans they reported, "There is no gladness among them, only sorrow and a great stench; their religion is not a good one." At Constantinople they said "we no longer knew whether we were in heaven or on earth, nor such beauty, and we know not how to tell of it." Vladimir thereupon received the missionaries from Constantinople, was baptized, and helped to convert his countrymen.

Photo by Gilbert H. Grosvenor

SCENE AT PETROGRAD IN FRONT OF ST. ISAAC'S CATHEDRAL

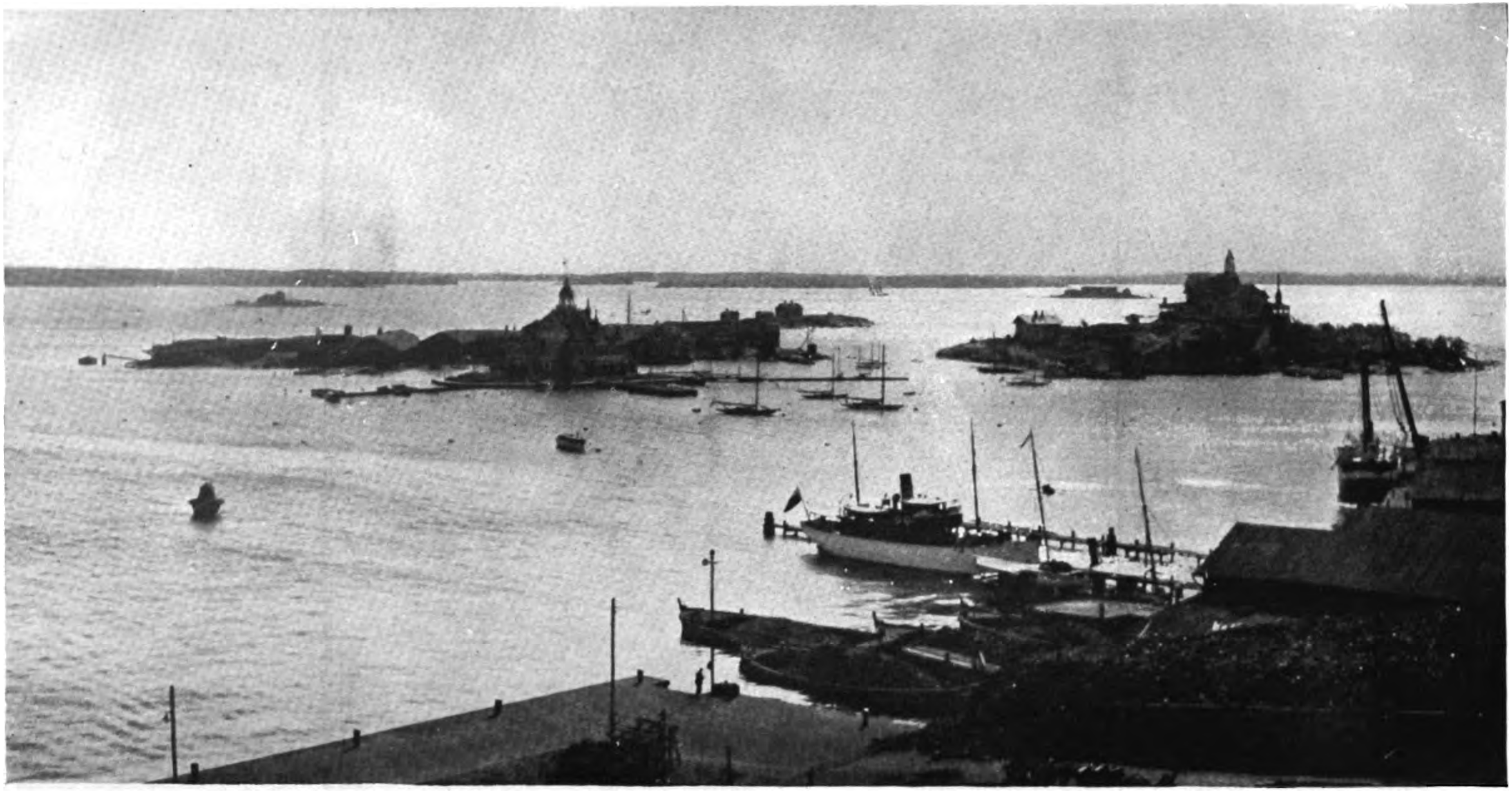
Petrograd is built on the site of ancient marshes which were half under water when Peter the Great selected the location for his new city. The imagination cannot comprehend the great labor that was required to bring the many thousands of huge piles to the city site and to drive them into place. The street in front of St. Isaac's lies over one of these marshes, and it is said that the pile foundation of this structure alone cost a million dollars. Boston, New York, and Philadelphia were thriving communities when Peter drove the first stake for his city, which has become a magnificent metropolis, with wide imposing avenues and immense open squares

the words, "Oh Lord! have mercy," or "Glory be to Thee, Oh Lord."

RUSSIA AND THE UNITED STATES

In our own country Russia has always stood by us against the world. Even back in the days of George III, when that monarch appealed to Catherine II of Russia to lend him soldiers to help put down the rebellion in America, writing her an autograph letter in that behalf, the Russian empress disdained to answer him in her own hand, but through her prime minister said she could not help but reflect on the consequences which would result for their dignity if they went jointly to calm a small rebellion which was not supported by any foreign power. This reply, as well as the way of sending it, angered George very much, and he said that she might at least have replied without using expressions that could not be pleasing to ears more civilized than those of the Russians.

Again, in 1812 Russia evidenced her friendship for the United States. She proposed to mediate and thus to settle the differences between the United States and Great Britain. President Madison accepted the proposal and nominated Al-



THE HARBOR OF HELSINGFORS, FINLAND

Photo by Gilbert H. Grosvenor

Helsingfors is located several hundred miles farther north than Sitka, Alaska. and yet it is a busy and growing metropolis of 159,000 inhabitants. Its population expanded 25,000 in less than five years ending in 1908. The harbor of Helsingfors is protected by the great fortress of Sveabord, called the Gibraltar of the North.

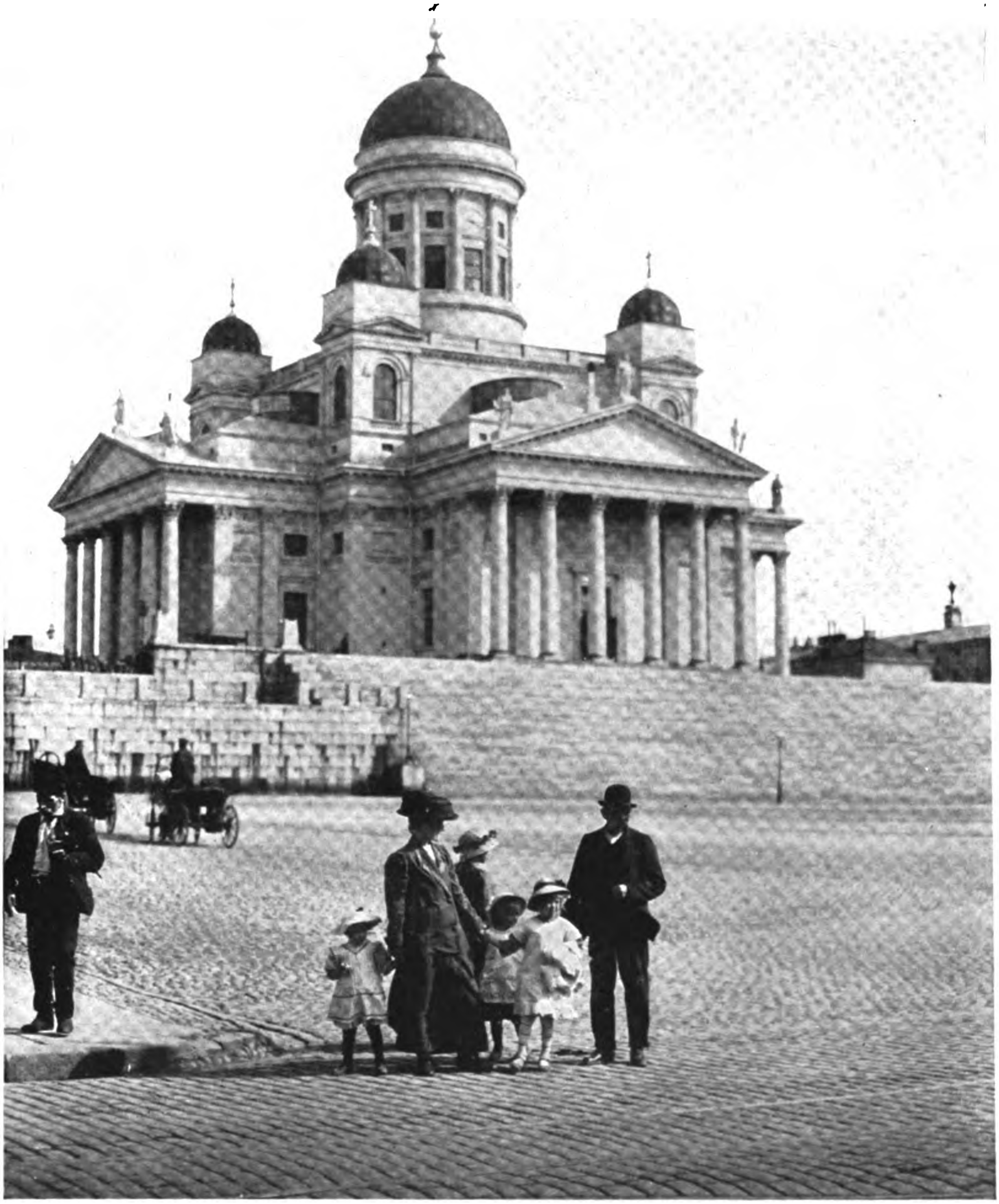


Photo by Gilbert H. Grosvenor

THE LUTHERAN CHURCH OF ST. NICHOLAS: HELSINGFORS, FINLAND

The culture of the capital of Finland is Swedish. The people of Finland are the best educated of any in Russia, illiteracy there being no higher than in Western Europe. Women were admitted to the right of suffrage in Finland in 1906.

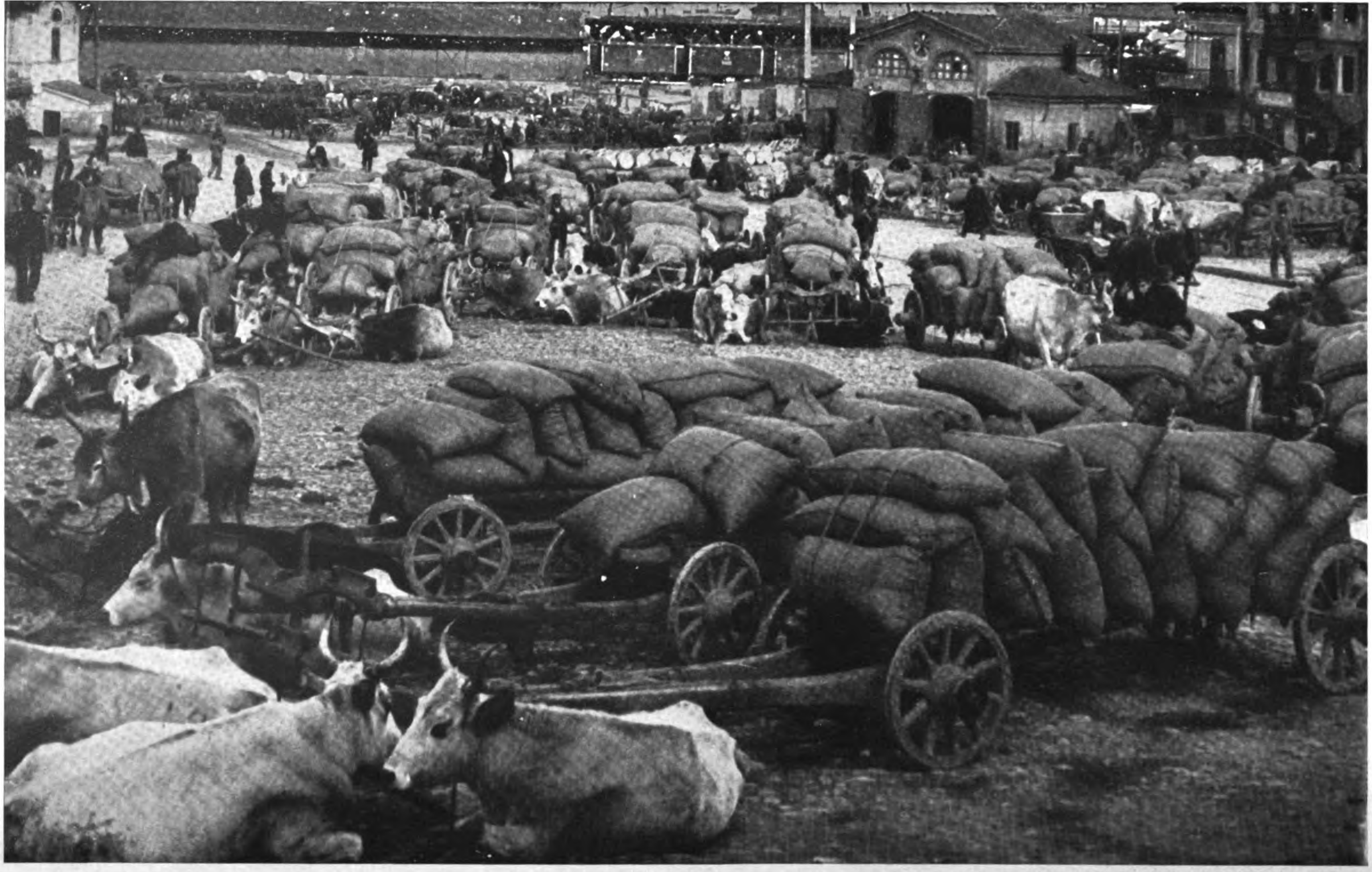


Photo and copyright by Underwood & Underwood

LOADING WHEAT FOR EXPORT AT ODESSA, RUSSIA

Founded by Catherine the Great of Russia, in 1792, soon after the extension of the dominion of the Empire to the shores of the Black Sea, Odessa is a comparatively new city, and its aspect is that of a busy modern West Europe metropolis. Its famous boulevard of Nicholayevsky, lined with rows of over-arching trees, is one of the beauty spots of Russia. The city lies near the great rivers, the Dnieper and the Dniester, which make it one of the great grain-handling ports of the world; yet not a ton of its business can reach the high seas without the permission of the Sultan of Turkey, for it has to pass through the Bosphorus and the Dardanelles, which he controls.

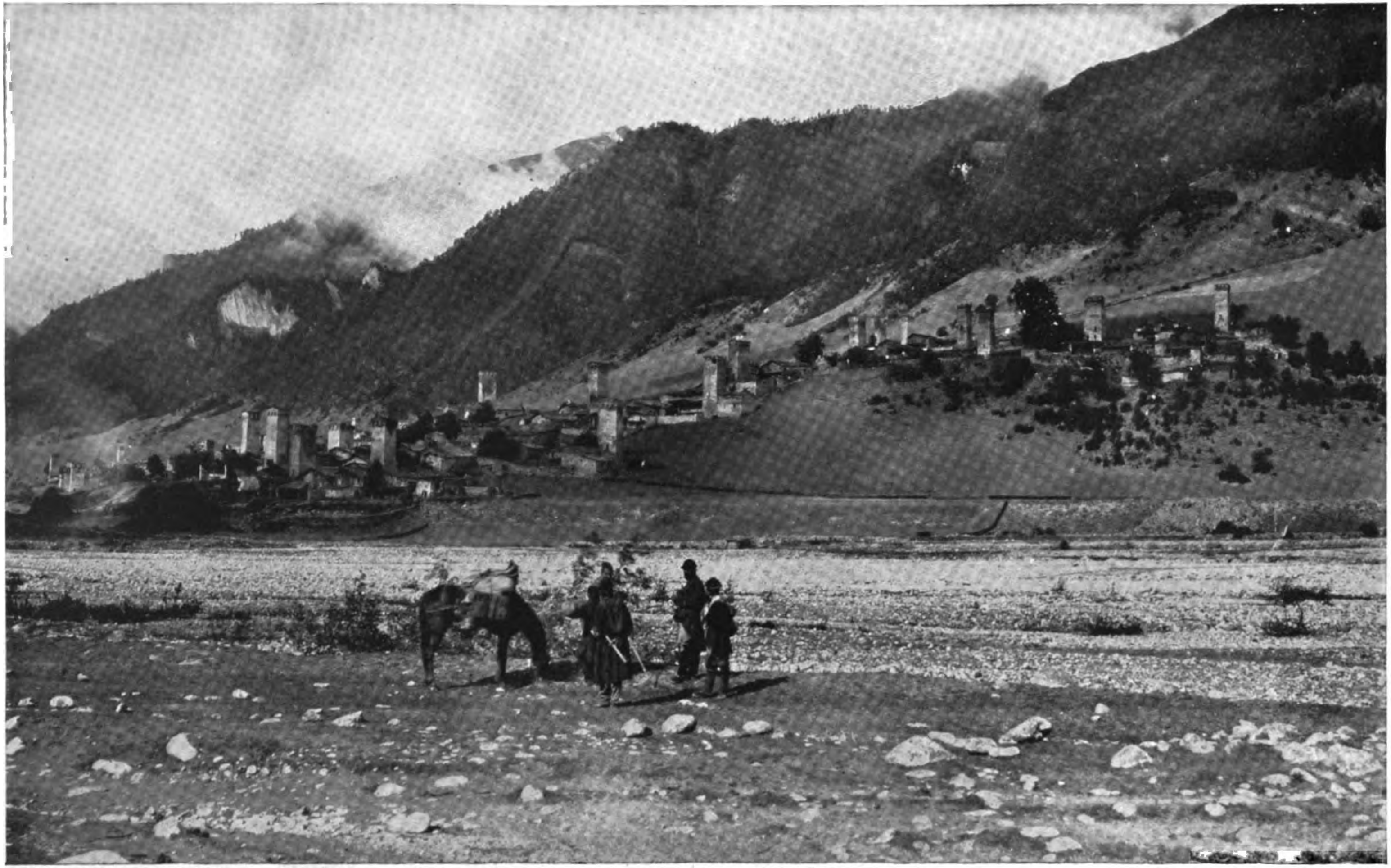


Photo by Vittorio Sella

A VILLAGE IN THE CENTRAL CAUCASUS MOUNTAINS, RUSSIA

Geographically the Caucasus forms a part of the boundary line between southeastern Europe and western Asia. But it is not merely a geographical boundary marked on the map with a red line and having no other existence; it is a huge natural barrier, 700 miles in length and 10,000 feet in average height, across which, in the course of unnumbered centuries, man has not been able to find more than two practicable passes.

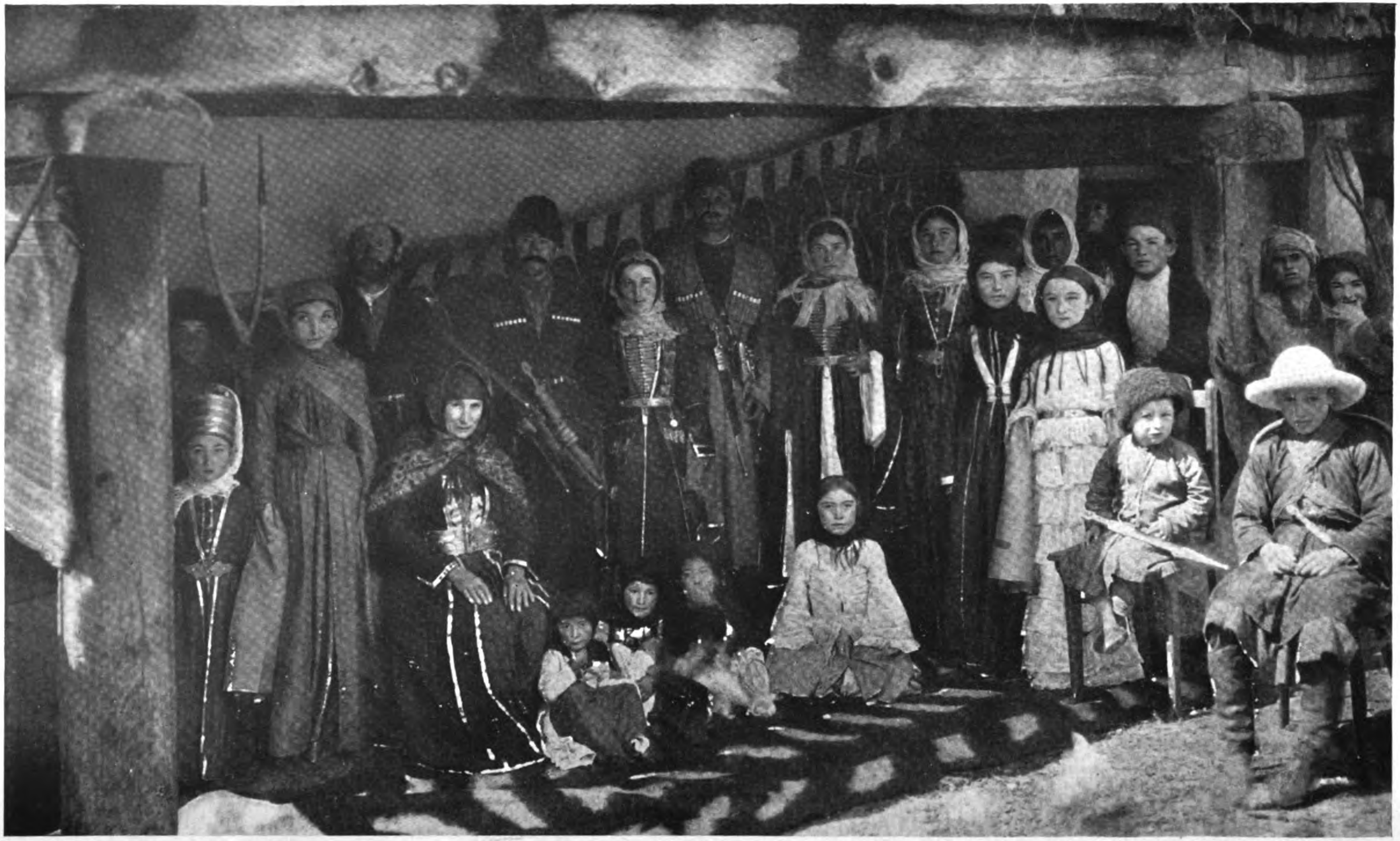


Photo by Vittorio Sella

PEOPLE AT CHEGEM, CENTRAL CAUCASUS, RUSSIA

The Caucasus region is the ethnological museum of the world. Pliny quotes Timosthenes as saying that in ancient Colchis 300 different languages were spoken, and adds that the Romans required the services of over a hundred interpreters to conduct affairs. Strabo mentions 67 different peoples and tongues in his day in the Caucasus region, and wrote of the poisoned arrows, spiked shoes, and troglodyte caves of that territory. See George Kennan's fascinating account of the Caucasus, "An Island in the Sea of History," in the NATIONAL GEOGRAPHIC MAGAZINE, September, 1913.

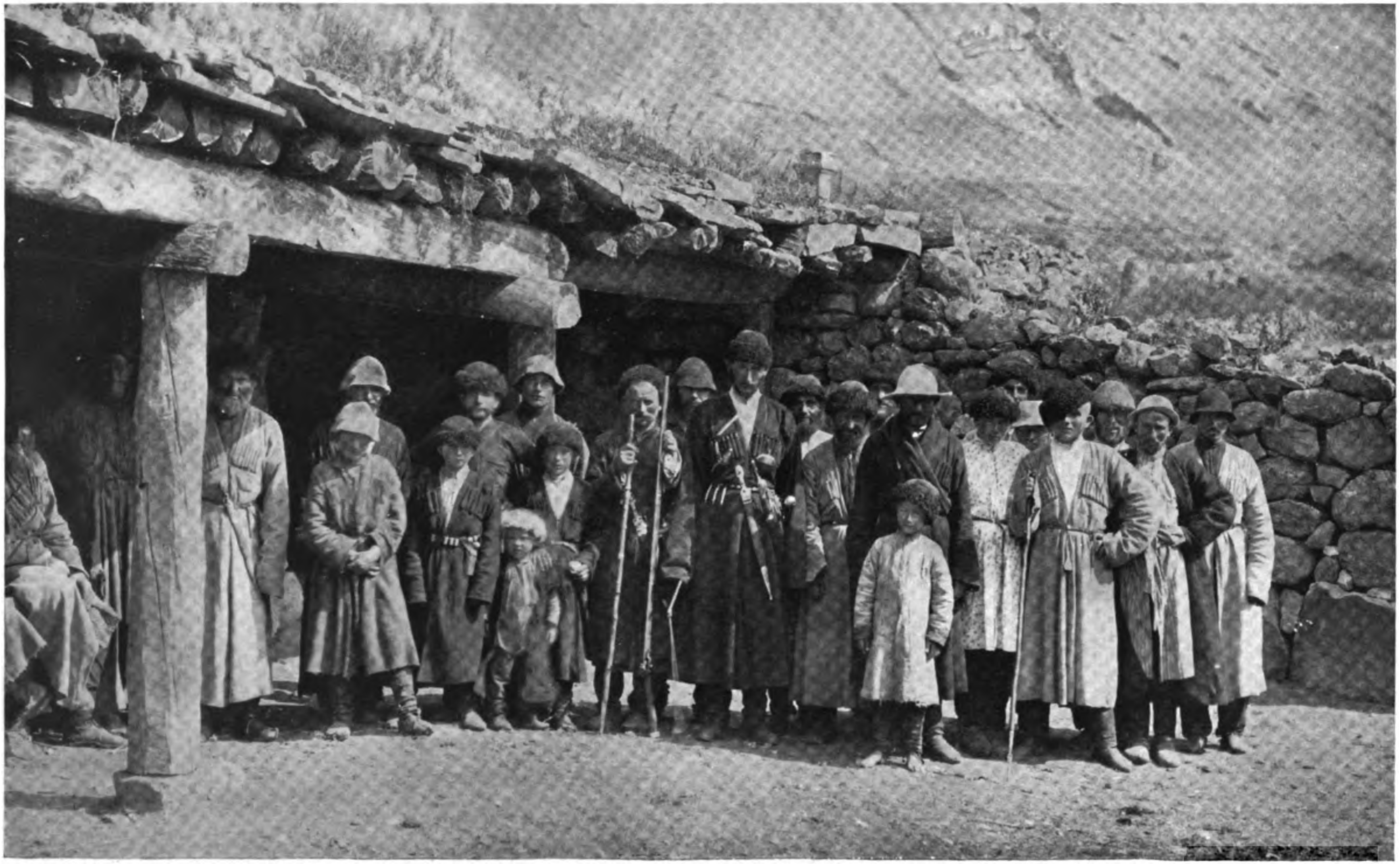
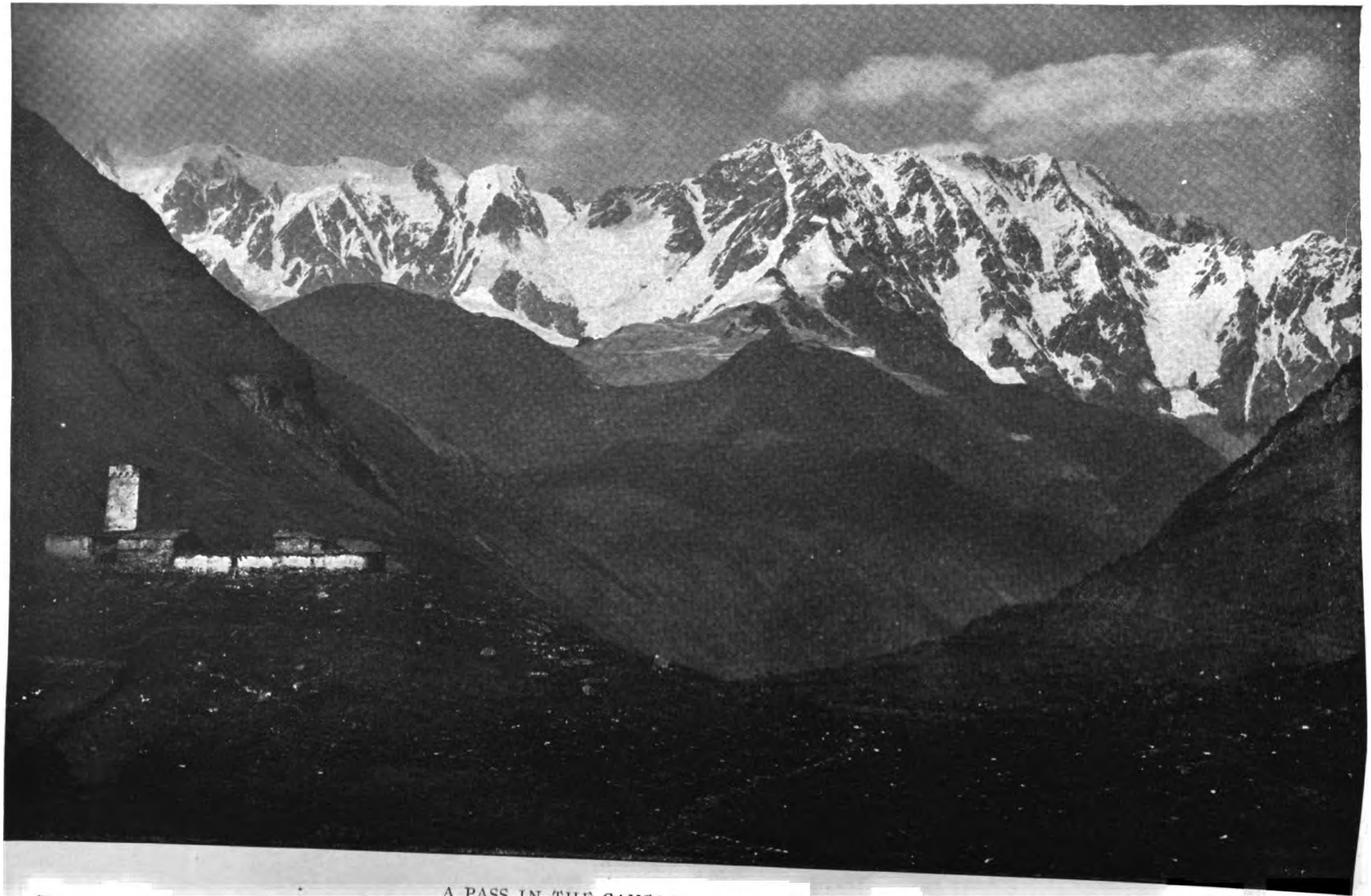


Photo by Vittorio Sella

PEOPLE OF BERINGI, CENTRAL CAUCASUS, RUSSIA

It was up the ancient Phasis, draining a southern valley from the Caucasus, that Jason sailed to gain the Golden Fleece, and in Colchis that he plowed his acres in the field of Mars. It was to the Caucasus that Hercules went to wrest the magic belt from Queen Hippolyte that made the Amazons of Daghestan such redoubtable foes. It was over the northern steppes of these mountains that poor Io, beset by Juno's gadfly, wandered in aimless torture.



A PASS IN THE CAUCASUS MOUNTAINS: RUSSIA

Photo by Vittorio Sella

The entire length of the Caucasus, measured along the crest of the central ridge, does not much exceed 700 miles, but for that distance it is literally one unbroken wall of rock, never falling below 8,000 feet and rising in places to heights of 16,000 and 18,000 feet, crowned with glaciers and eternal snow.

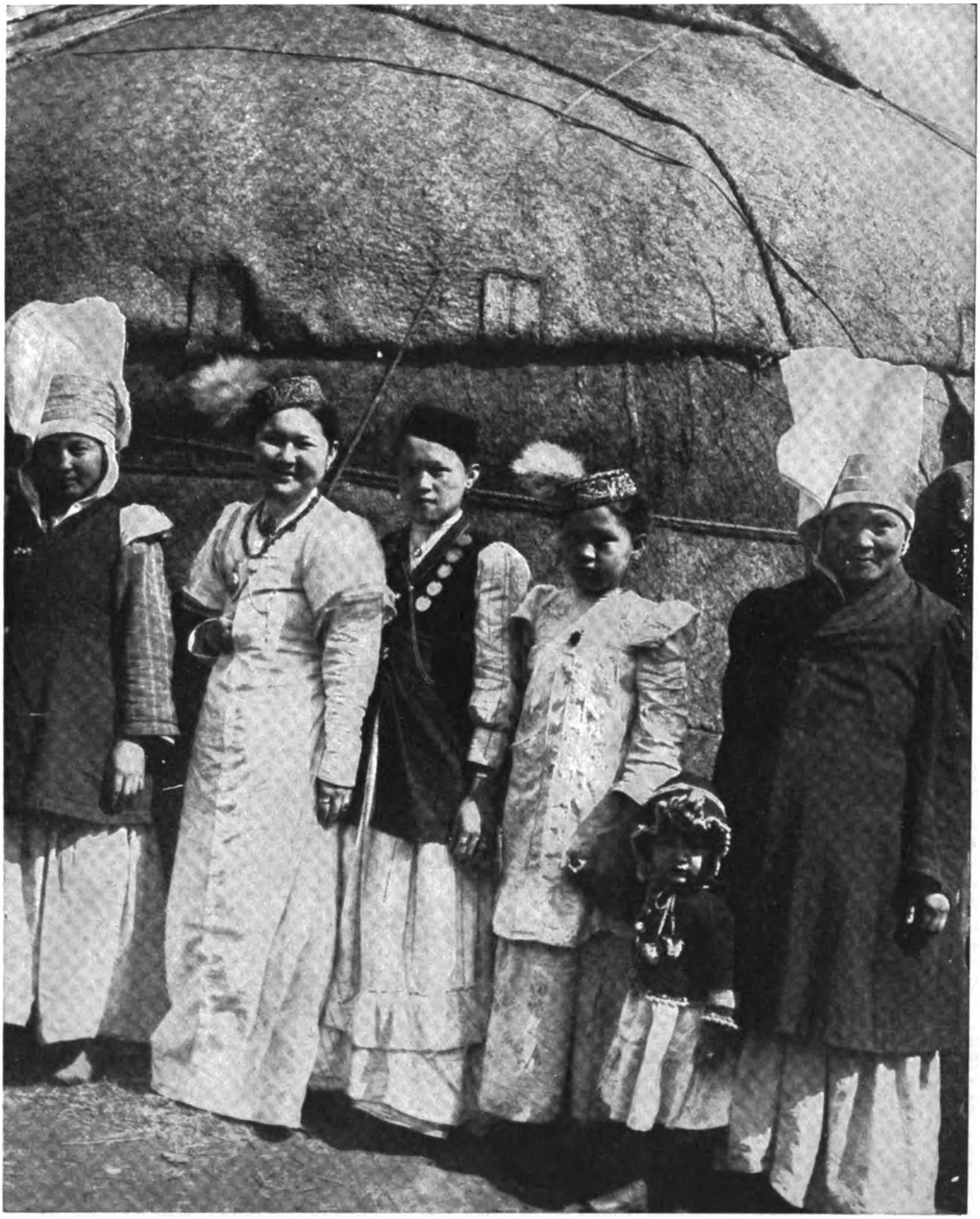


Photo and copyright by Underwood & Underwood

KIRGHIZ WOMEN AND GIRLS: WESTERN SIBERIA

Russia has a wonderful list of races and peoples within its confines—Slavs, Lithuanians, Iranians, Latins, Teutons, Finns, Turks, Tatars, Mongolians, Georgians, and Circassians—and the most of these races are divided again into from two to a dozen different peoples. Four million Tatars, a million and a half of Bashkirs, nearly five million Turkomans, and a million and a half of Georgians indicate something of the vastness of the Babel of modern Russia. The Slavs, of course, vastly predominate, with approximately two-thirds of the population. The Kirghiz are closely related by ties of blood to the Mongolians, and by ties of speech to the Tatars. They have preserved to this day the features of the former and the tongue of the latter. Those who live in the upland region trace their descent back to a legendery king, Kirghiz, sprung from Oghuz-Khan, ninth in descent from Japheth.

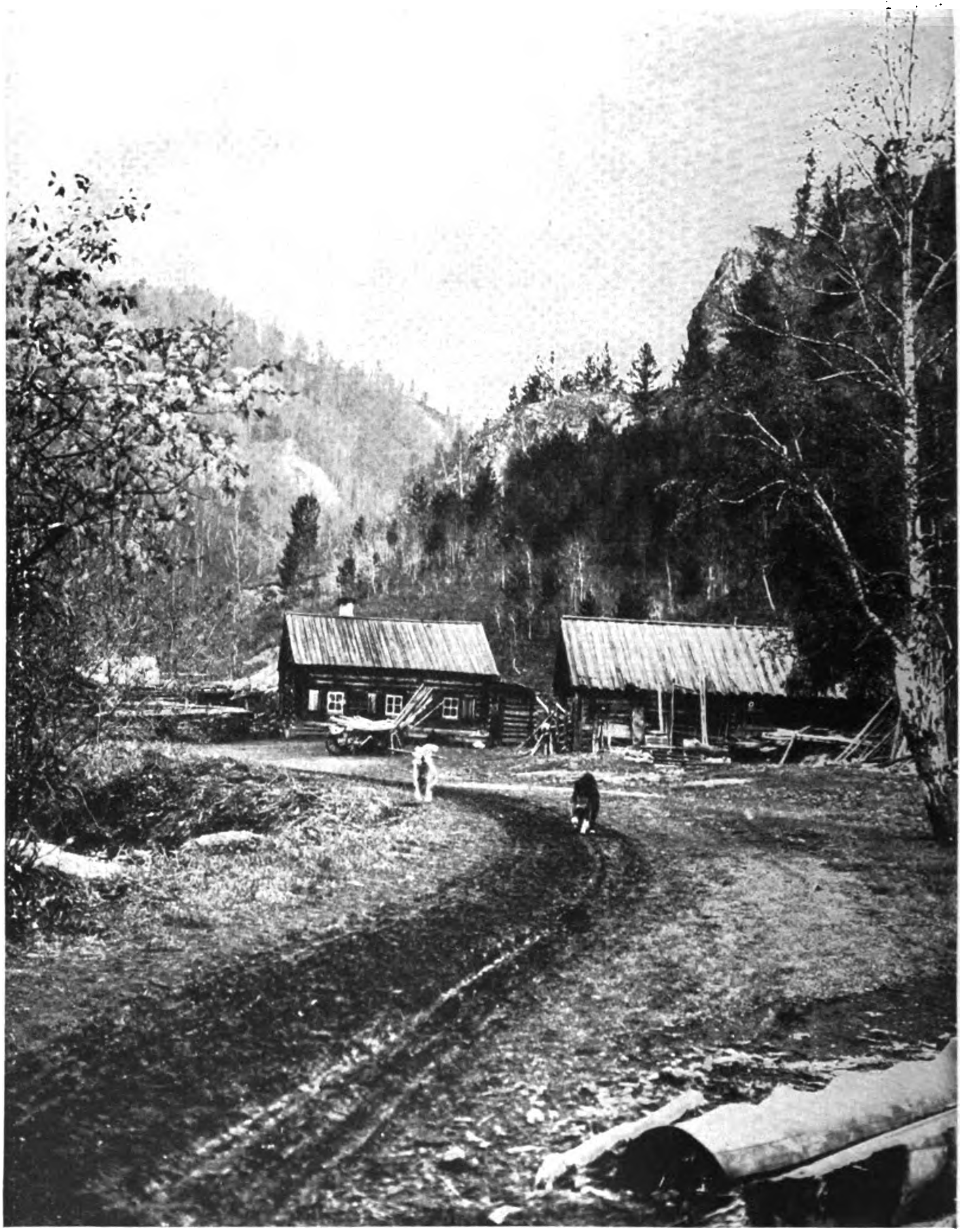


Photo and copyright by Underwood & Underwood

TEMPORARY FARM OF A SIBERIAN FARMER

Many thousands of peasants annually journey from European Russia to Siberia, pioneers such as were those hardy Americans who pressed westward across the Alleghanies a century ago and laid the foundations of the wonderful progress of the Mississippi Valley. The government does everything within its power to encourage them, even to buying agricultural machinery and reselling it to them on the instalment plan.

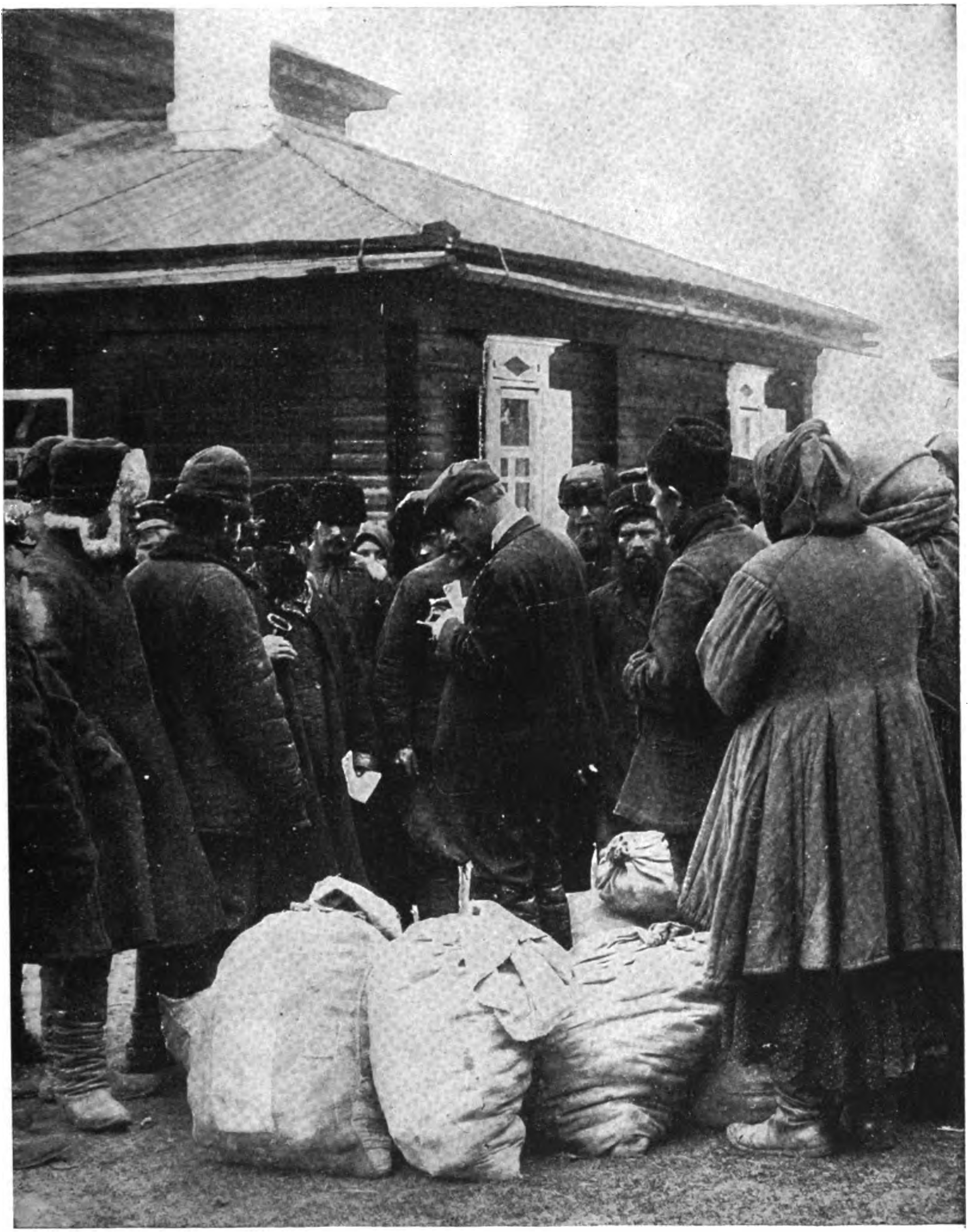


Photo and copyright by Underwood & Underwood

IMMIGRANTS FROM RUSSIA ARRIVING IN SIBERIA

Such people as these undoubtedly will prove to be the progenitors of a race that will compare with our own sturdy farmers of the Northwest. A group of Russian peasants emigrated to Siberia with nothing but the clothes on their backs, a little flour, some home-tanned leather, and a few tools for carpentry and blacksmithing. The first day they made two sets of ovens out of brick they prepared from a clay-bed near by, and the men burned charcoal while the women made bread. Within two days after their arrival they had six blacksmith's forges going, and inside of ten days they had built themselves rude houses, made wagons, manufactured spades by the dozen, and reshod their horses, all the iron used being forged on the ground; yet none of them could read or write.

bert Gallatin and James A. Bayard to act in conjunction with John Quincy Adams in the negotiations; but the Senate refused to confirm the nomination of Gallatin on the ground that he still held the Secretaryship of the Treasury, and so the peace proposals fell to the ground and the war was fought out. When Alexander II freed the serfs of Russia the United States Congress passed a complimentary resolution and sent it to St. Petersburg by a special envoy. The incident pleased the Tsar greatly, and a little later he returned the compliment with interest. His minister to Washington, intimate friend of Slidell and Benjamin, did all that he could to prevent secession, but after Fort Sumter was fired on Russia came out for the Union.

In 1863 the English Government had become seriously stirred as a result of the war. What happened to our trade when the present war broke out was small in comparison with what our civil war did for Great Britain. Hundreds of thousands of people in the textile mills were thrown out of work because American cotton was not to be had. Intervention was openly discussed. Gladstone had hailed Jefferson Davis as a man who had made a nation, and even Lord Palmerston was inclined to lend ear to suggestions of forcing a peace in some way. Finally the English government sounded France with reference to a sort of enforced mediation. About this time, however, a Russian fleet made an ostentatious visit to the port of New York and the social functions that accompanied the visit put England on notice as to where Russia stood, and England's interest in stopping the war suddenly ceased.

FINAL IMPRESSIONS

There are conditions in Russia which a visitor from the land of free schools, free speech, and a free press finds it difficult to understand; the deplorable rarity of good schools, making it a sore trial for a poor man to get his son educated; the arrival of his American newspaper, with often half a page stamped out by the censor in ink so black that it is impossible to decipher a single letter; the timidity, nay fear, of some people of being overheard when talking frankly on political subjects; the enormous power concentrated in the hands of one individual. But other writers have written with needless emphasis and length on these unpleasant themes, and it is not necessary to discuss them here.

The purpose of this article has been to set forth the immensity of the great land empire, in size four times larger than the Roman Empire at its greatest; to visualize some of the common sights and customs among a kindly and noble race by the use of many unposed photographs; to show the tremendous vitality and fecundity of the Russian people, more than half of whom lived in bondage in the lifetime of thousands of our readers; and to explain the youth of Russia as a nation, showing how she threw off her foreign yoke in the same quarter century that Jamestown was founded and the Pilgrim Fathers landed at Plymouth, and how she is in some respects younger even than the United States, for our ancestors brought from England and Holland institutions wrought through centuries of hard testing, and a blood and brain trained for self-government through many, many generations.

But with all the ignorance and poverty of the masses in Russia in the past, the leaven of national intelligence has begun to work. The government is following the example of our own country in trying to take the gospel of good farming to the peasantry, showing the peasant how to make wholesome butter and more per cow; showing him how to grow more bushels of wheat and rye and oats to the acre; bringing him better blood for his horses and his cattle and his sheep. The progress of the times has also brought the moving picture and the telephone and the railroad into a thousand remote communities, and has set to work forces that inevitably will spell the doom of illiteracy and ignorance and make Russia in fact the land of unlimited possibilities.

HENRY GANNETT,

The Loved and Honored President of the National Geographic Society, Died at His Home in Washington, November 5, 1914. An appreciation of his life will appear in an early number of the National Geographic Magazine.

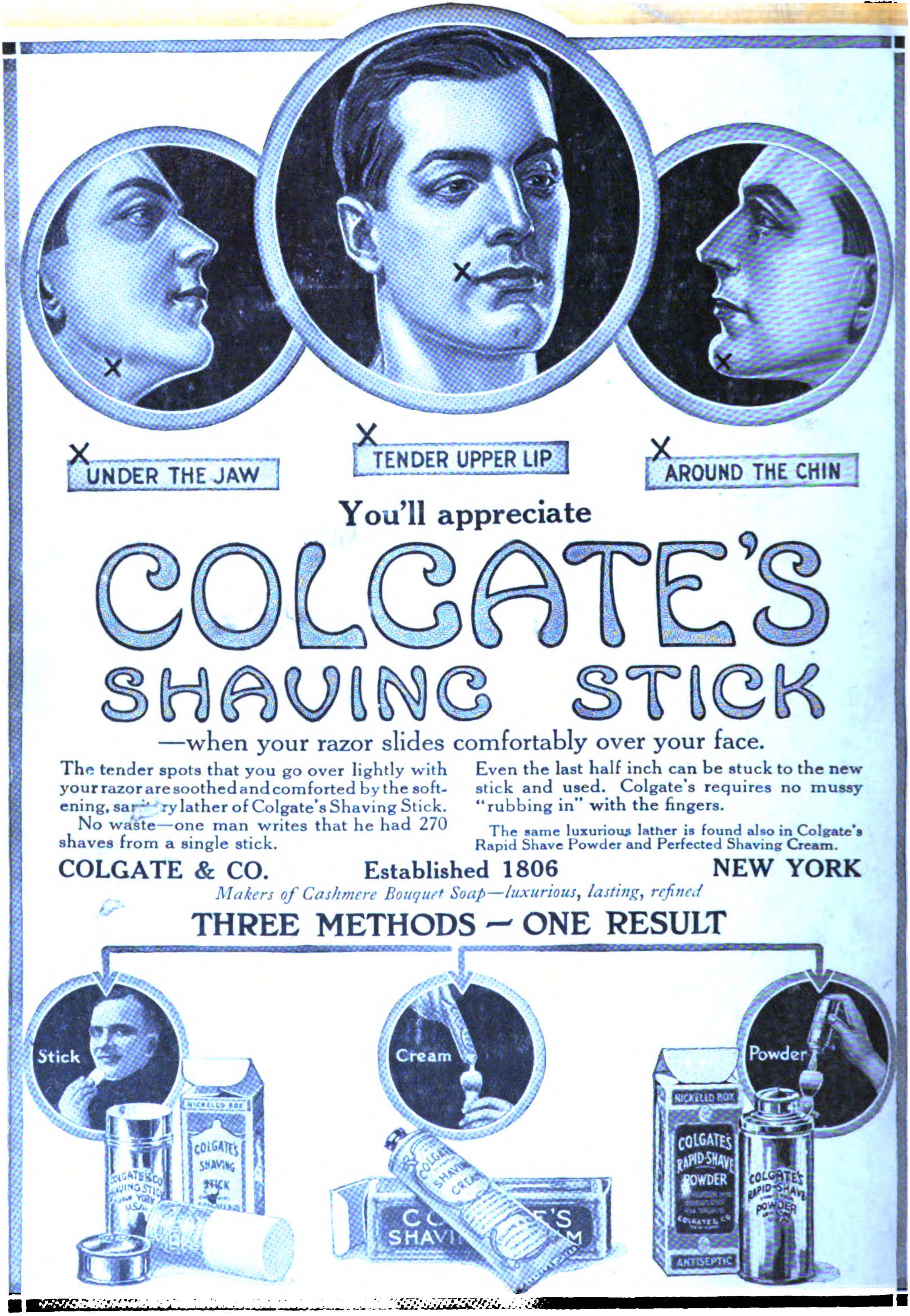
Experts Who Know

They speak from their own experience; years of practical work in the preparation of perfect food for particular people. Their testimony cannot be gainsaid:

"*To obtain the best results we use and recommend for use 'Royal' Baking Powder. We find it superior to all others.* —"The International Mutual Cooks
"and Pastry Cooks Assn.
"*Adolph Meyer, Sec'y.*"

ROYAL
BAKING POWDER

Absolutely Pure **No Alum**



Stick
Cream
Powder
NICKELED BOX
COLGATE'S SHAVING STICK
COLGATE & CO SHAVING STICK NEW YORK U.S.A.
COLGATE'S SHAVING CREAM
COLGATE'S RAPID-SHAVE POWDER
COLGATE & CO
ANTISEPTIC

UNDER THE JAW

TENDER UPPER LIP

AROUND THE CHIN

You'll appreciate

COLGATE'S SHAVING STICK

—when your razor slides comfortably over your face.

The tender spots that you go over lightly with your razor are soothed and comforted by the softening, sanitary lather of Colgate's Shaving Stick.

No waste—one man writes that he had 270 shaves from a single stick.

Even the last half inch can be stuck to the new stick and used. Colgate's requires no mussy "rubbing in" with the fingers.

The same luxurious lather is found also in Colgate's Rapid Shave Powder and Perfected Shaving Cream.

COLGATE & CO. **Established 1806** **NEW YORK**

Makers of Cashmere Bouquet Soap—luxurious, lasting, refined

THREE METHODS – ONE RESULT

PRESS OF JUDD & DETWEILER, INC.

VOLUME XXVI

NUMBER SIX

THE NATIONAL GEOGRAPHIC MAGAZINE

DECEMBER, 1914

◆

CONTENTS

Life in Constantinople H. G. DWIGHT
WITH 25 ILLUSTRATIONS

Where Adam and Eve Lived FREDERICK AND MARGARET SIMPICH
WITH 35 ILLUSTRATIONS

Mystic Nedjef, the Shia Mecca FREDERICK SIMPICH
WITH 4 ILLUSTRATIONS

Impressions of Asiatic Turkey STEPHEN VAN RENSSELAER TROWBRIDGE
WITH ILLUSTRATIONS

Henry Gannett S. N. D. NORTH

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D.C.

$2.50 A YEAR

25 CTS A COPY

NATIONAL GEOGRAPHIC SOCIETY

HUBBARD MEMORIAL HALL
AVENUE OF THE PRESIDENTS AT M STREET, WASHINGTON, D. C.

HENRY GANNETT . . . PRESIDENT
O. P. AUSTIN . . . . . . SECRETARY
GILBERT H. GROSVENOR, DIRECTOR AND EDITOR
JOHN OLIVER LA GORCE . ASSOCIATE EDITOR
O. H. TITTMANN . . . VICE-PRESIDENT
JOHN JOY EDSON . . . . TREASURER
F. B. EICHELBERGER . ASSISTANT TREASURER
GEORGE W. HUTCHISON, ASSISTANT SECRETARY

BOARD OF MANAGERS

1912-1914

JOHN JOY EDSON
President Washington Loan & Trust Company

CHARLES J. BELL
President American Security and Trust Company

DAVID FAIRCHILD
In Charge of Agricultural Explorations, Dept. of Agric.

C. HART MERRIAM
Member National Academy of Sciences

O. P. AUSTIN
Statistician

GEORGE R. PUTNAM
Commissioner U. S. Bureau of Lighthouses

GEORGE SHIRAS, 3D
Formerly Member U. S. Congress, Faunal Naturalist, and Wild-Game Photographer

GRANT SQUIRES
New York

1913-1915

FRANKLIN K. LANE
Secretary of the Interior

HENRY F. BLOUNT
Vice-President American Security and Trust Company

C. M. CHESTER
Rear Admiral U. S. Navy, Formerly Supt. U. S. Naval Observatory

FREDERICK V. COVILLE
President of the Washington Academy of Sciences

JOHN E. PILLSBURY
Rear Admiral U. S. Navy, Formerly Chief Bureau of Navigation

RUDOLPH KAUFFMANN
Managing Editor The Evening Star

T. L. MACDONALD, M. D.

S. N. D. NORTH
Formerly Director U. S. Bureau of Census

1914-1916

ALEXANDER GRAHAM BELL
Inventor of the telephone

HENRY GANNETT
Chairman of U. S. Geographic Board

J. HOWARD GORE
Prof. Emeritus Mathematics, The Geo. Washington Univ.

A. W. GREELY
Arctic Explorer, Major Gen'l U. S. Army

GILBERT H. GROSVENOR
Editor of National Geographic Magazine

GEORGE OTIS SMITH
Director of U. S. Geological Survey

O. H. TITTMANN
Superintendent of U. S. Coast and Geodetic Survey

JOHN M. WILSON
Brigadier General U. S. Army, Formerly Chief of Engineers

To carry out the purpose for which it was founded twenty-three years ago, namely, "the increase and diffusion of geographic knowledge," the National Geographic Society publishes this Magazine. All receipts from the publication are invested in the Magazine itself or expended directly to promote geographic knowledge and the study of geography. Articles or photographs from members of the Society, or other friends, are desired. Contributions should be accompanied by an addressed return envelope and postage, and be addressed:

GILBERT H. GROSVENOR, EDITOR

CONTRIBUTING EDITORS

A. W. GREELY
C. HART MERRIAM
O. H. TITTMANN
ROBERT HOLLISTER CHAPMAN
WALTER T. SWINGLE
ALEXANDER GRAHAM BELL
DAVID FAIRCHILD
HUGH M. SMITH
N. H. DARTON
FRANK M. CHAPMAN

Entered at the Post-Office at Washington, D. C., as Second-Class Mail Matter

Copyright, 1914, by National Geographic Society, Washington, D. C. All rights reserved

JAN 16 1915

VOL. XXVI, No. 6 WASHINGTON DECEMBER, 1914

THE NATIONAL GEOGRAPHIC MAGAZINE

LIFE IN CONSTANTINOPLE

BY H. G. DWIGHT

HE WHO would write of life in Constantinople today risks writing of what today is and tomorrow is not.

The revolution of 1908 started an era of transformation whose end is not yet. So far as outward appearances are concerned — and appearances, the outer forms and color of life, are all that make the difference between one part of the world and another—Constantinople has changed more in the last five years than in the 200 before them.

During that time, while the other capitals of Europe gradually modernized themselves, Constantinople remained a medieval city. At first it was largely a matter of remoteness and poor communications. In the end the case became the will of one man—the ex-Sultan Abd-ül-Hamid II.

So long as he remained on the throne there was not an electric light in the town, for instance, or a telephone or a trolley-car. They were expressly forbidden by the Sultan, who firmly believed that a dynamo had something to do with dynamite—that arch enemy of thrones. For an equally good reason he prohibited the use of rubber tires for street cabs. The official inquiry into an attempt upon his life revealed—whether correctly or not—the pregnant fact that the bomb had been thrown from a carriage so fitted out, and he made up his mind that there must be an immediate and necessary relation between bombs and rubber tires.

THE COMING OF MODERN THINGS

The whole story of his dislike of modernity and of life in Constantinople during his long reign would be a piece of comic opera if it had not been a tragedy for his own people. This is not the place to repeat it, and Constantinople is now well on the way toward becoming a modern capital. Dynamos have at last begun to hum on the shores of the Golden Horn; electric cars already clang about; telephone wires have been strung through the city and will shortly be in use; streets have been smoothed and widened, squares and parks have been laid out; motor traffic has begun to ply; there is talk of subways, of rapid transit, of I know not what other modernities.

Rome was not built in a day, however, nor New Rome, and many days will pass before old Stamboul loses her tang of the medieval. In the meantime life there is the compromise between East and West which you might expect of a city that straddles Europe and Asia. Compromise, though, is not always the word. I have not quite made up my mind whether I am ready to subscribe to Mr. Kipling's famous stanza, but certain it is that while East and West do meet in Constantinople they do not willingly mix. This is made very evident for an outsider in the mere matter of tongues.

An Italian professor asked me once if there were any one official language for the American "Parliament," or whether each member spoke in his own. The pro-

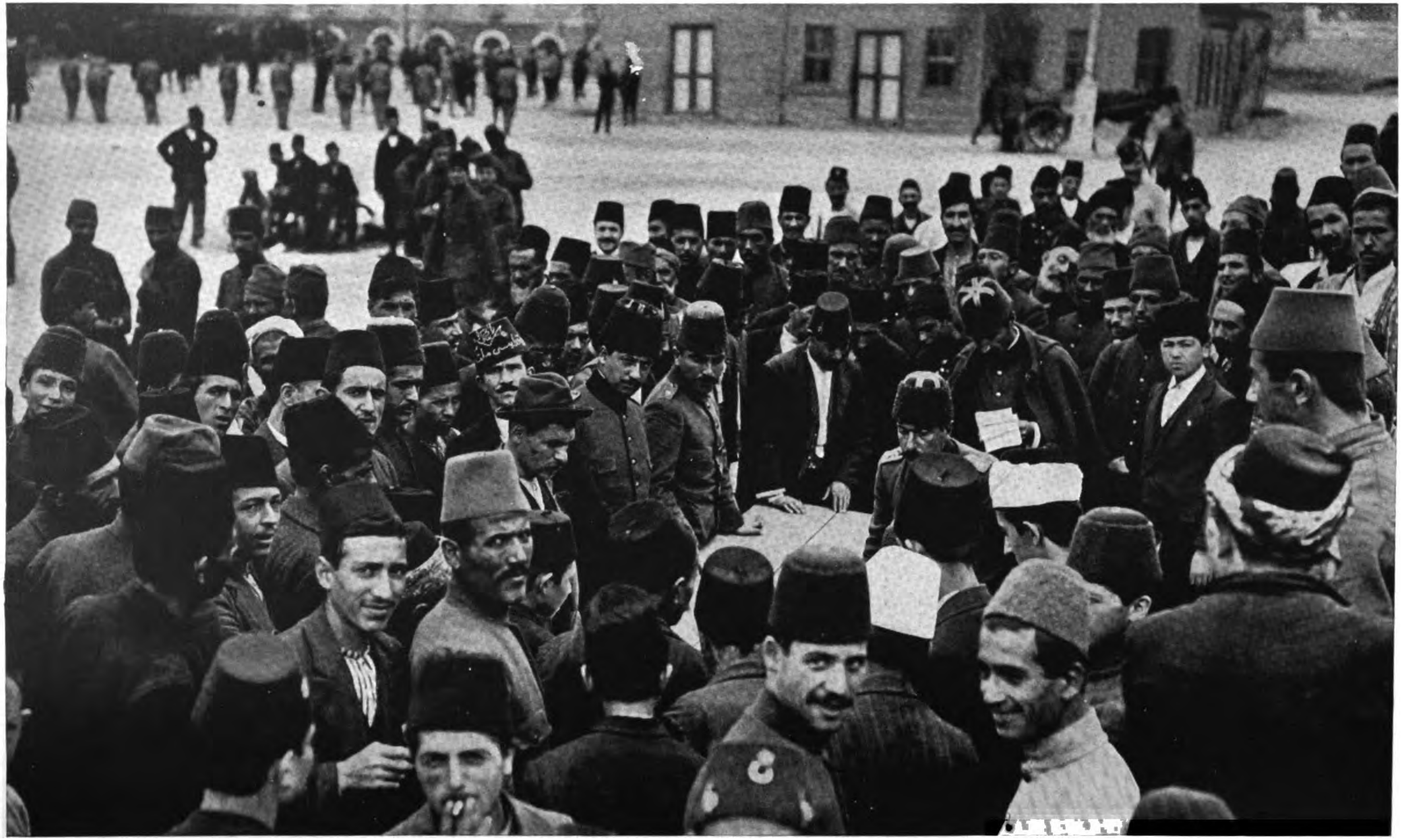


Photo and copyright by International News Service

ENROLLING RECRUITS IN CONSTANTINOPLE

One may know a Turk or a Turkish subject by his fez. This peculiar form of head-dress takes its name from the city of Fez, which, until the discovery of synthetic colors, had a monopoly of the manufacture, because it controlled the juice of the berry from which the dye used to color them was made. Now they are manufactured in France and Germany.

fessor was much surprised when I told him that no member had any other tongue than English, and I think he thereafter began to consider our country as a sort of western Austria-Hungary, in which a vast *Italia irredenta,* together with Germanies, Polands, Scandinavias, and other east provinces, were domineered by a powerful oligarchy of Anglo-Saxons.

WHERE RACES DO NOT MIX

His idea of Washington would apply much more closely to Constantinople. Of its million inhabitants—no one has yet undertaken an exact census — scarcely half are Turks, the other half being made up of Greeks, Armenians, Jews, and smaller fractions of Levantine races, together with considerable colonies of the principal European nations. What is most characteristic of Constantinople, however, is that these various ethnic groups continue to speak their own languages, wear their own costumes, follow their own customs, and otherwise remain distinct to a degree which would be inconceivable in western Europe or America.

New York, it is true, might better be named New Cork, though New Jerusalem would suit it very well; and I am not unaware that it contains a Chinatown, a Little Italy, and other quarters where the signs you see and the languages you hear are from another continent. Yet New York, as a whole, does not look cosmopolitan, and New Yorkers have little of the cosmopolitan in their makeup; for New York imposes its own code on the newcomer, and has a trick of turning him into a New Yorker in an extraordinarily short time. It may be sooner, it may be later; but if he has come to stay he inevitably yields, or his children after him, to the mysterious metamorphosis. The secret of the miracle is that he is willing and anxious to yield. He has come to New York with no other intention than yielding. In the majority of cases he has voluntarily given up his own home and language and traditions in order to acquire those of the New World.

NO OUTSIDER WOULD BE A TURK

Whereas in Constantinople no outsider wishes to become a Turk. Indeed, some of the outsiders, like the Greeks, have just as good a right as the Turks to be there, and in the back of their minds they cherish an idea that the day will come when the Turks will be there no more. That is a matter which we do not need to discuss; but I state the fact as illustrating the difference between two attitudes, making for and against assimilation. The Turk has never assimilated except by force, and as time has gone on he has offered less and less inducement to do so. His door is one of advancement, but not of all advancement. He does not set the standards of society. He does not control more than a proportion of the rewards of competition.

It is not even necessary for a subject of his empire to speak his language. On the contrary, he himself tends more and more to yield to outside influences, learning the languages, adopting the costume, imitating the manners, of the West.

So it is that Constantinople is a babel neither modern nor medieval, not wholly Asiatic and not wholly European, and least of all cosmopolitan, being less a metropolis than an agglomeration, a sort of midway pleasaunce of provincial towns. Life is one thing or another, according to the world you live in. It is most colored for the sojourner from the West, whose own world is likely to be too small for him and whose eye is more open to the contrasts that surround him. It were well, however, that he have a sense of humor as well as an eye for the picturesque, and that he add thereto a disposition to take things as they come.

STREETS UNNAMED, HOUSES UNNUMBERED

So shall he not be too amazed when he discovers, for instance, that his street has no name and his house no number. Those toys of the inquisitive West have begun to penetrate even the reserve of Stamboul; but the real system on which the addresses of Constantinople are organized is that of quarters—like the parishes of Shakespeare's England. I, for one, live in such and such a village of the Bosphorus, in the quarter of Candle Goes Not Out. Find that quarter, and some one in it will be able to find me, if he feel so disposed.

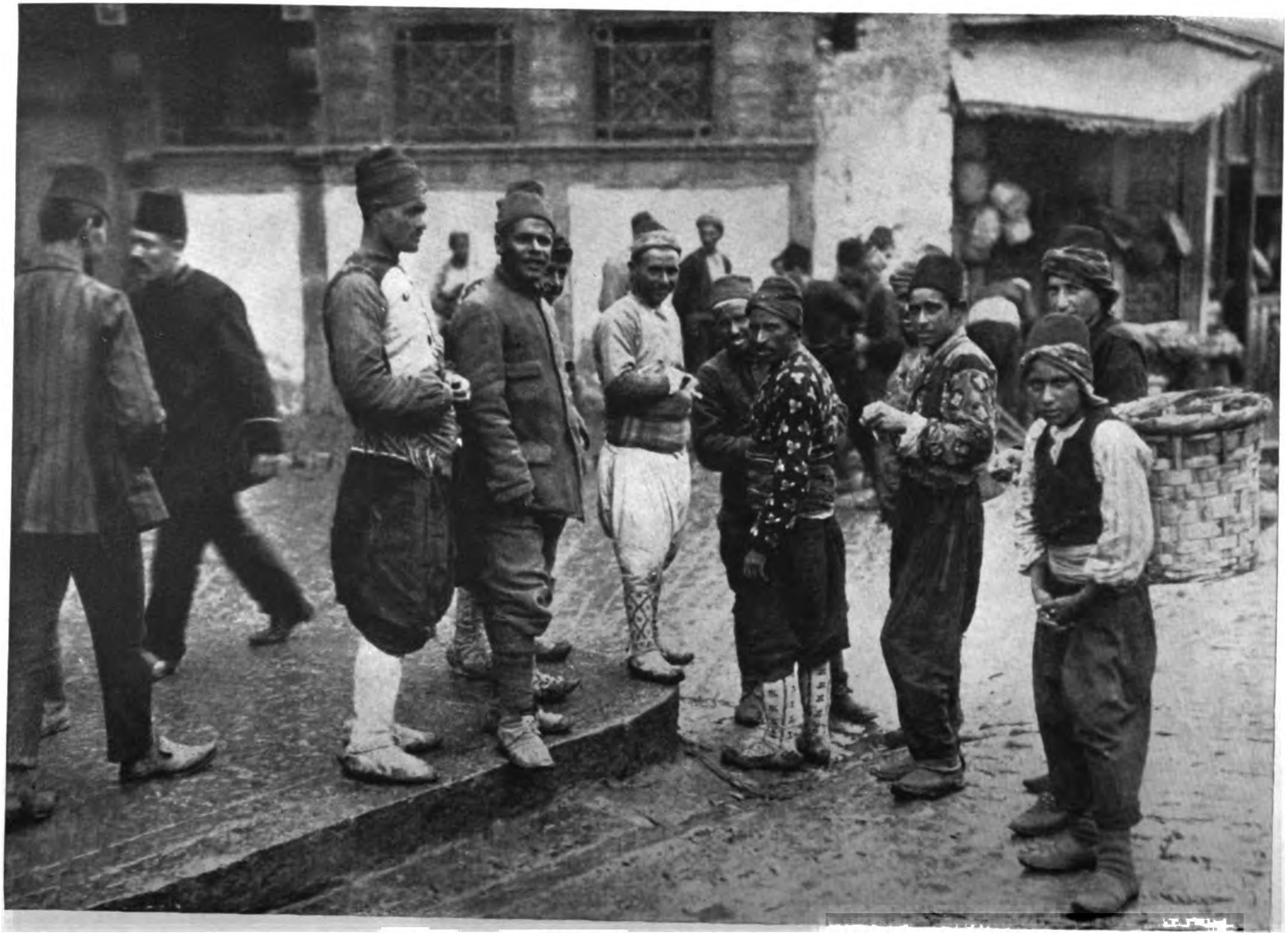


Photo and copyright by International News Service

TYPES OF TURKISH RECRUITS: CONSTANTINOPLE

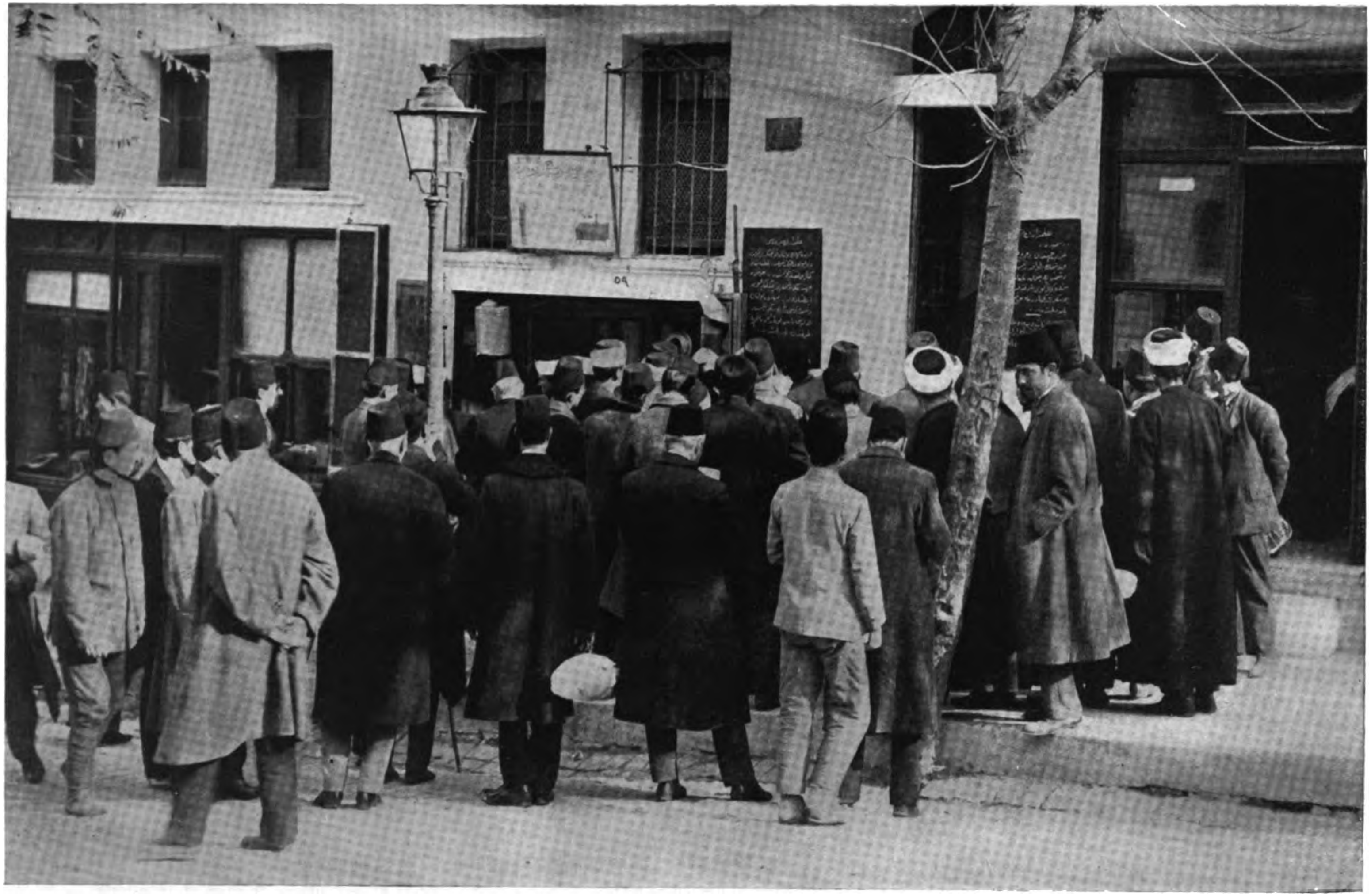


Photo and copyright by International News Service

READING THE LATEST NEWS AT THE NEWSPAPER OFFICES: CONSTANTINOPLE

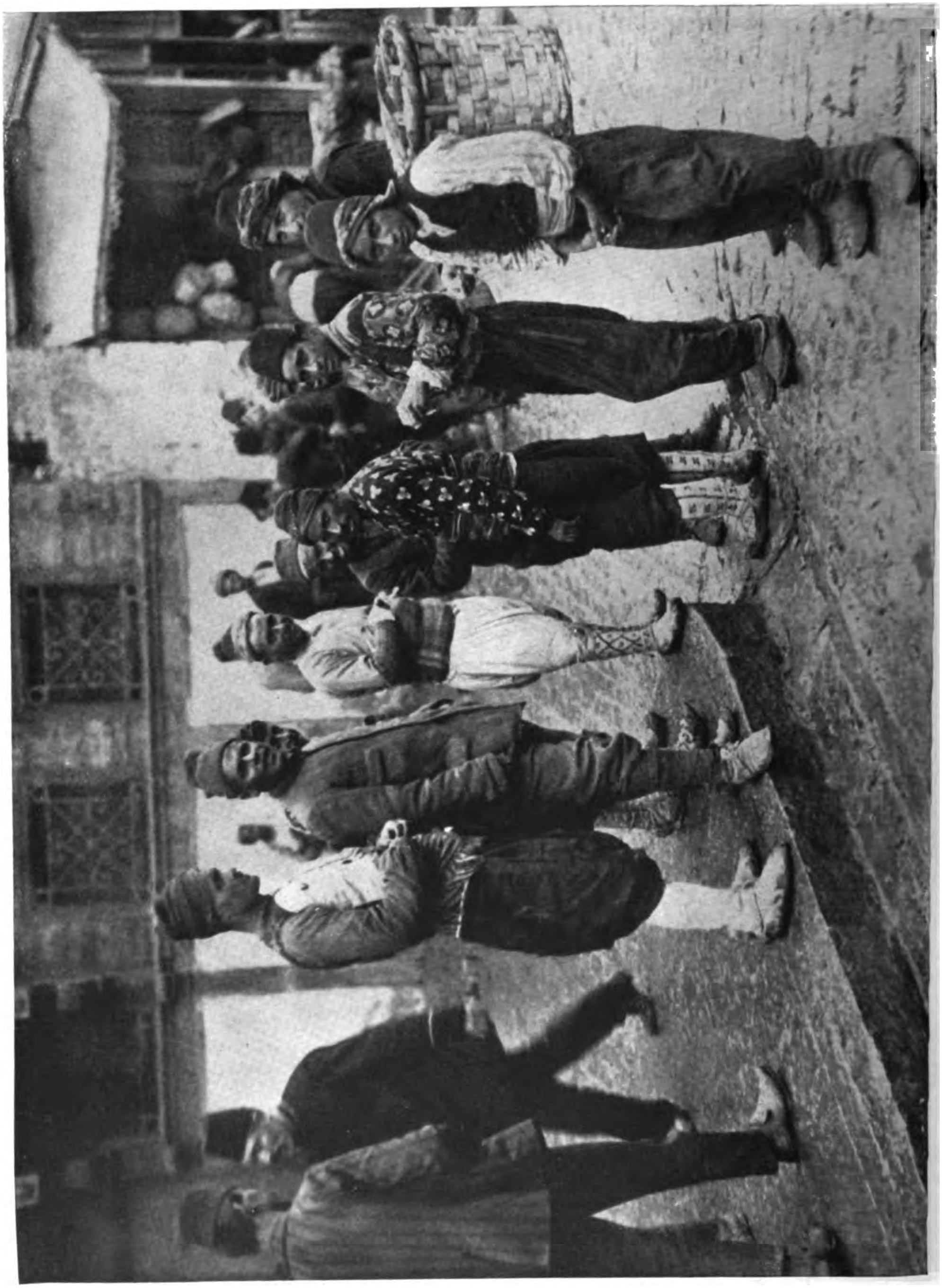


Photo and copyright by International News Service

TYPES OF TURKISH RECRUITS: CONSTANTINOPLE

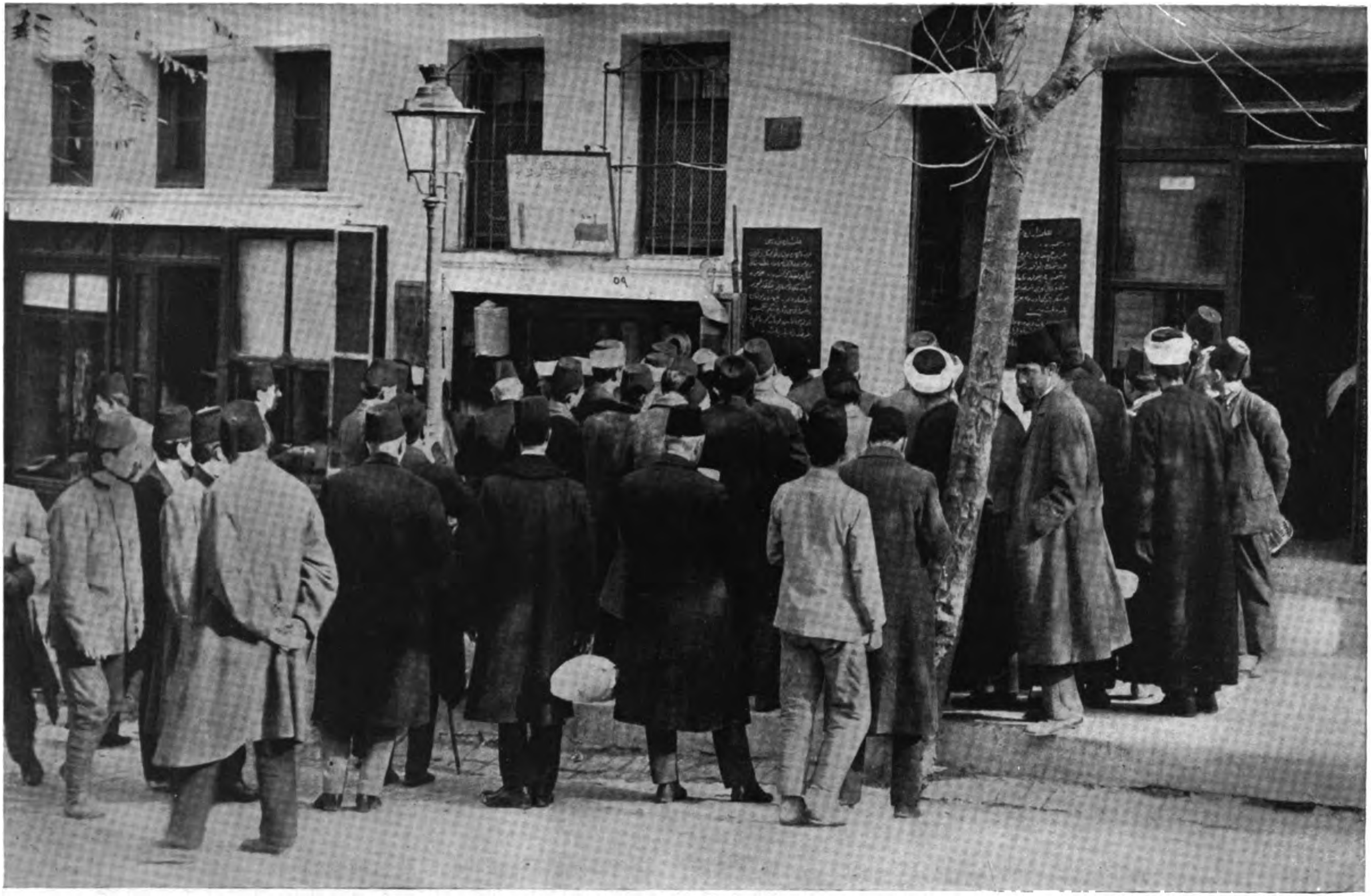


Photo and copyright by International News Service

READING THE LATEST NEWS AT THE NEWSPAPER OFFICES: CONSTANTINOPLE

THE HARBOR OF CONSTANTINOPLE **Photo by H. G. Dwight**

Constantinople is situated at the southern end of the Bosporus, which connects the Black Sea and the Sea of Marmora, on the European side of the channel

There are flats and houses of various kinds at the sojourner's disposal, all of them rather primitive from an American point of view and none of them—alas!—to be had for nothing. Elevators and electric light are rarities beyond the reach of any modest purse. Steam heat is only less rare. Baths are new enough for house-owners to make a point of them, while hot water is not to be obtained for the asking. If you prefer the pleasant seaside suburbs to the heart of the town, you may be happy if any water at all is laid on to the house. The good old way, by no means extinct, was to hire a *saka* to bring you water from the nearest street fountain (see page 541).

As for the kitchen arrangements, they would fill the western housewife's heart with despair, were it not that a Constantinople cook is lost before a proper cooking range. What he prefers is a sort of raised fireplace under a hood. In this high stone platform are a number of hollows surmounted by gridirons on legs. In the hollows he builds little bon-fires of charcoal and cooks each dish separately on its gridiron.

CONSTANTINOPLE'S COOKS

In the choice of this personage there is considerable latitude. He is more likely to be a man than with us, and he may belong to any one of half a dozen nationalities. He is not often a Turk, however. Turkish servants are faithful and honest within their limits, and, as porters, doorkeepers, grooms, and gar-

IN THE HARBOR OF CONSTANTINOPLE Photo by H. G. Dwight

Constantinople is a city of mosques and minarets, and the harbor there without them would be like the harbor of New York without the skyscrapers of Manhattan

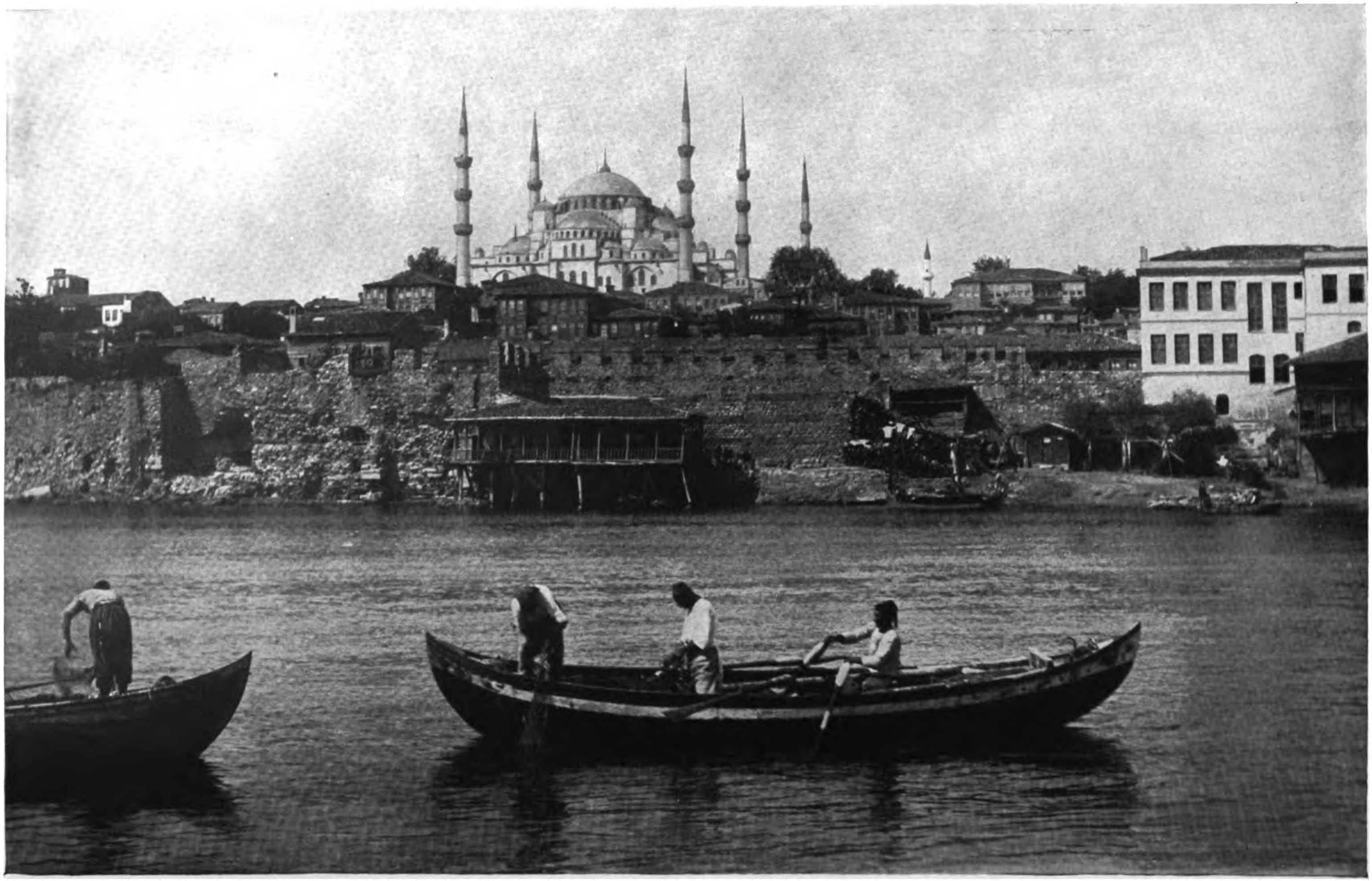
deners, do efficient work; but they are two slow and too averse from learning new ways to suit most European masters. Their tradition is that of the rest of Asia, where many servants make up a household, each capable of doing only one thing.

Turkish women never serve in Christian houses, unless as occasional charwomen or washerwomen. Greek and Armenian women, on the other hand, are the mainstay of the Constantinople housekeeper; even Turks often employ them. The Greeks are the smartest and the most efficient, though they are perhaps too quick-witted to be perfectly reliable. The Armenians are neither so quick nor so presentable, and I doubt if they are any more honest. I do not mean, however, to imply that the Levantine is necessarily more uncertain than his western brother.

Croats are a common addition to the menfolk of an establishment, whether as cooks, footmen, gardeners, or doorkeepers—Croats or Montenegrins, who, as every one knows, are Serbs under other names. It is as doorkeepers that this gentry chiefly shine, lending the dignity of their stature and of their handsome costume to every door of any standing. Every Christian door—that is, for the Turks—employs Albanians for the same service. And no servant is more faithful, whether as doorkeeper, groom, gardener, or shepherd; but they are a proud and sensitive race and you must treat them with due consideration of their honor. In fact, the whole relation of master and man is a more human one in Constantinople than it is likely to be in the West.

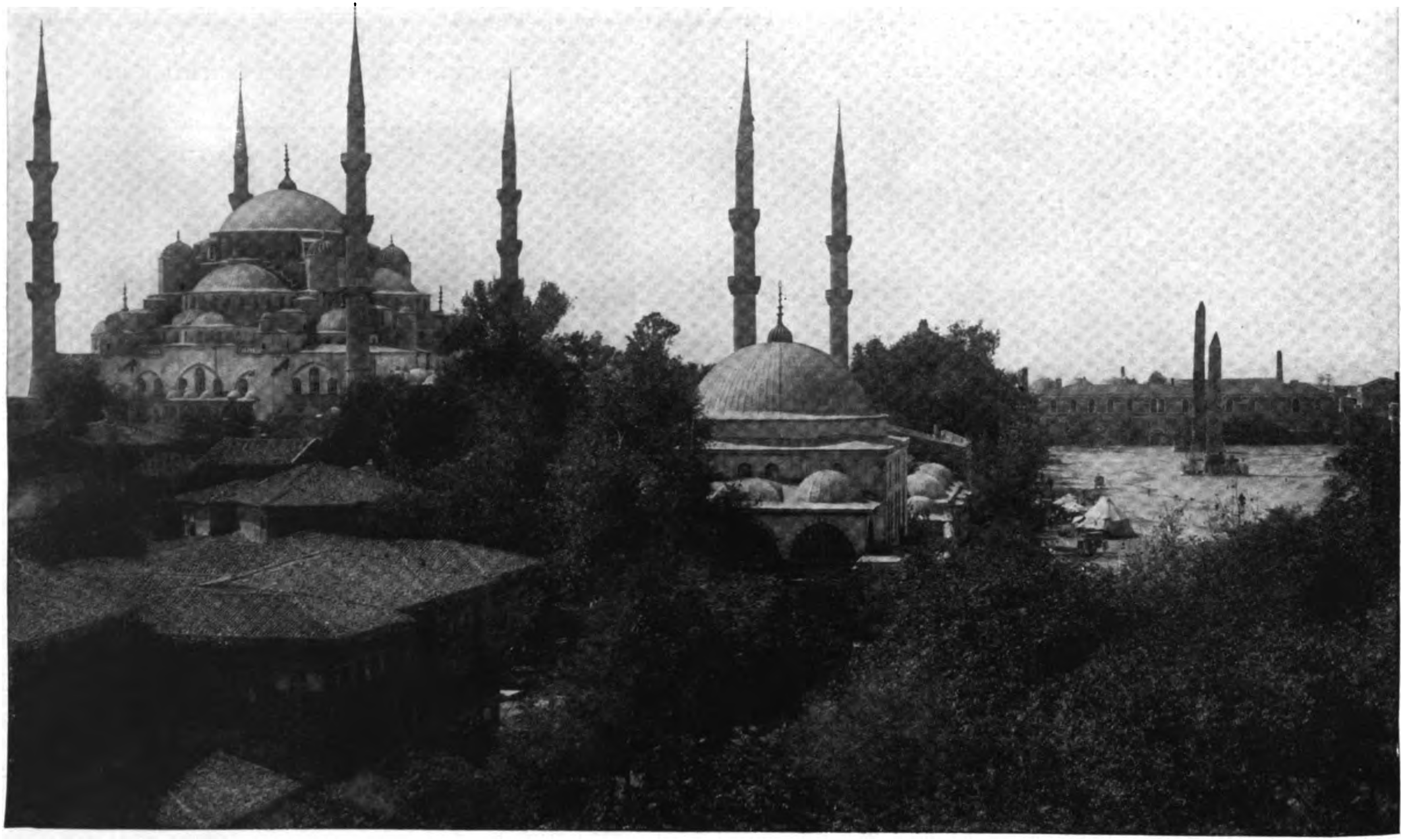
POLYGLOT OF TRADESMEN

Housekeeping in Constantinople is a polyglot affair, but not so polyglot as it sounds. It can usually be conducted in Turkish or Greek. Some gifted persons are able to order a dinner in Armenian, while a few fortunate ones need only the French with which they came. This language, or a flat variety of it, which after Paris reminds one of corked champagne, is spoken by more people in Constantinople, I fancy, than any other single tongue.



THE MOSQUE OF SULTAN AHMED IN CONSTANTINOPLE

This mosque is the largest in Constantinople, with the single exception of that of Sultan Mohammed II. It covers the most historic spot in the city, occupying part of the site of the Augustæum, chief of the Byzantine forums; of the great palace of Constantine, abode of Byzantine royalty, and of the Hippodrome, the place of reunion of the Byzantine people. It is probably visible for a greater distance and from more points of view than any other mosque in the city on the Golden Horn. It stands side by side with Santa Sophia, the one the highest achievement of Moslem art and the other the masterpiece of Christian architecture.



ANOTHER VIEW OF THE MOSQUE OF SULTAN AHMED, WITH THE HIPPODROME ON THE RIGHT

The Hippodrome of Constantinople, by its great size dwarfing every other building in the entire Roman East, was world renowned. The stupendous structure, begun by Emperer Severus in 203, was about 1,400 feet long by 400 feet wide. It covered 12 3/10 acres of ground. No theater, no palace, no public building today has a promenade so magnificent as it had. Standing 40 feet above the ground, protected by solid marble railing reaching to the breast, the spectator had a spacious avenue 2,766 feet in length along which to walk.

Photos by H. G. Dwight

IN A TURKISH STREET: CONSTANTINOPLE

Constantinople is a city without street names or house numbers. One's mail is addressed to his quarter of the city, and the postman relies on the neighborhood folk to serve as a city directory for all new names.

PILGRIMS ON THE WAY TO MECCA: CONSTANTINOPLE

From eight to ten of the twelfth month of the Mohammedan year the great pilgrimage to Mecca begins and the faithful from among the 300,000,000 people professing the Mohammedan religion turn their hearts, if not their steps, toward Mecca.

Photo and copyright by International News Service

A GROUP OF TURKS DISCUSSING THE WAR NEWS

Discussion is a favorite pastime with the East. There is always time enough to haggle and bargain for hours, to philosophize over trifles, and to argue the case of almost everything.

It is of small use for marketing, however. Greek or Turkish are necessary for that. Almost all butchers are Greeks from Epirus or the Ionian Islands. Many market gardeners are also Greeks, though many others are southern Albanians, and not a few are Bulgars from Macedonia, while much of the street peddling so characteristic of Constantinople is done by Turks. They are not Constantinople Turks, however.

Practically all the work of the city is done by outsiders, and each kind of work, as the reader may have already gathered, is done chiefly by men from a certain "country." So it is that the men who sell ice-cream in the streets are Albanians, Christian and Mohammedan, from the region of Üsküb; that the layers of pavements are Mohammedan Albanians of the south; that railroad navvies—or those of the Roumelian Railroad—are Christian Albanians from the same region; that bath men are Turks from Sivas; that street porters are Kürds or Asia Minor Turks, according to the kind of load they carry; that most boatmen are from the Black Sea coast, and so on indefinitely.

NO ASSIMILATION

And though they may spend the greater part of their lives in Constantinople they almost always remain outsiders, wearing their own costumes, speaking their own dialects, keeping their families in their own "country," and going at intervals to spend a few months with them.

This curious state of affairs is partly a relic of Byzantine times, for many of the habits of Constantinople are known to have been formed before the Turks arrived there; but it is also connected with an ancient guild system, which has not yet quite transformed itself into the trade-unionism of the day. All the industries of the city used to be organized into guilds. The members of each were drawn from one race or district, and were divided into categories of masters and apprentices under a chief called a *kehaya*. The heads of the more powerful guilds were high official personages.

This insured the guilds certain privileges and immunities, in return for which they were compelled to contribute generously to the expenses of war—and incidentally to those of the *kehaya*. A remnant of this custom exists today among the lightermen of the harbor and the custom-house porters, who are required to give the government the use of so many boats and so many men on so many days a month. The continuance of this mutual relation is doubtless one reason why these two guilds are still able to resist foreign competition and modern industrial methods. The others are but a shadow of what they were, and with them are disappearing many picturesque customs. The lightermen and the porters, however, absolutely control the port of Constantinople.

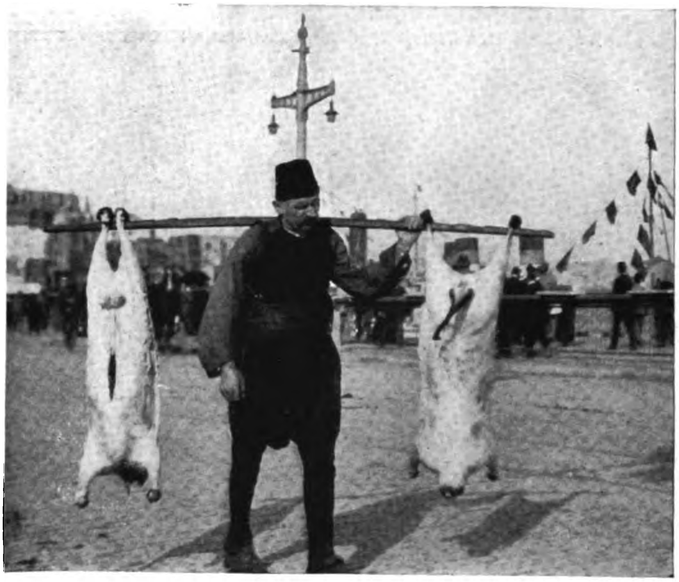


Photo by H. G. Dwight

A BUTCHER IN CONSTANTINOPLE

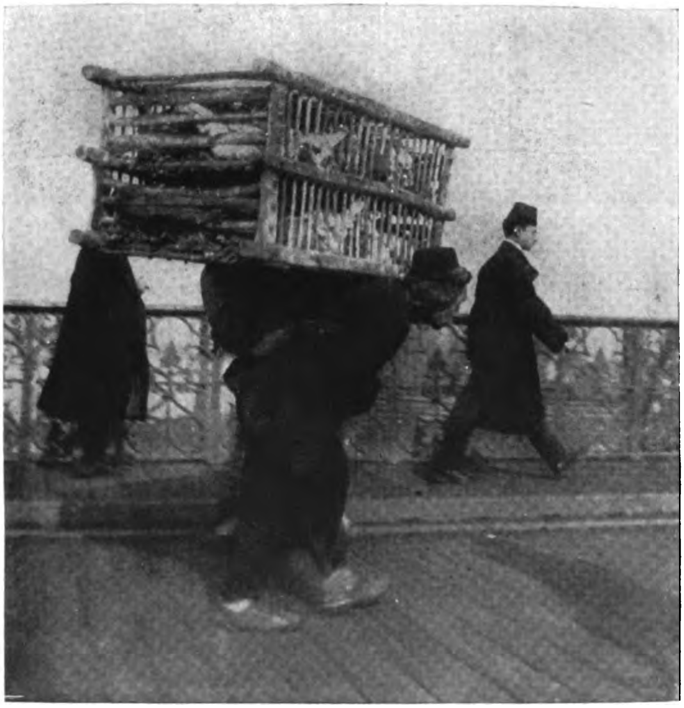


Photo by Emma G. Cummings

CHICKENS EN ROUTE TO MARKET: CONSTANTINOPLE

Often as many as 150,000 persons, of every race and of every region, clad in every kind of human garment, and representing every gradation of human rank, traverse the Galata bridge in a single day. There are no rules of the road. Carriage, beast, and pedestrian mix up in a hopeless jumble, the latter plunging into a tumultuous living mass, dodging hither and thither, stopping now and rushing on again, and finally, as though by a miracle, emerging unharmed at the other end.

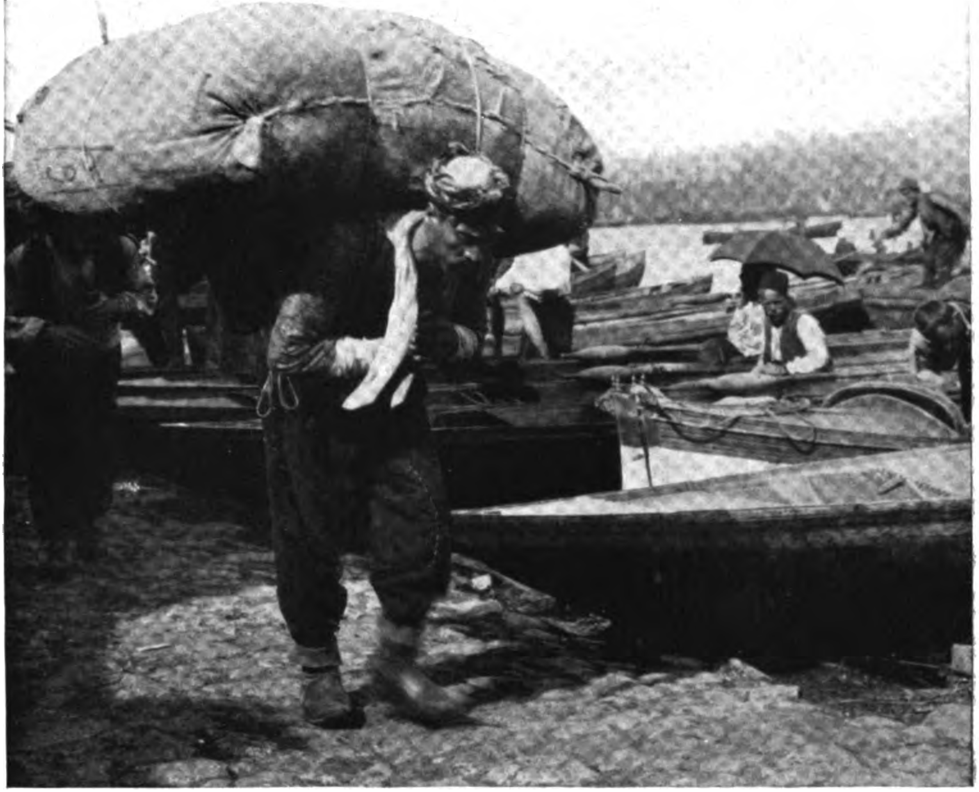


Photo by H. G. Dwight

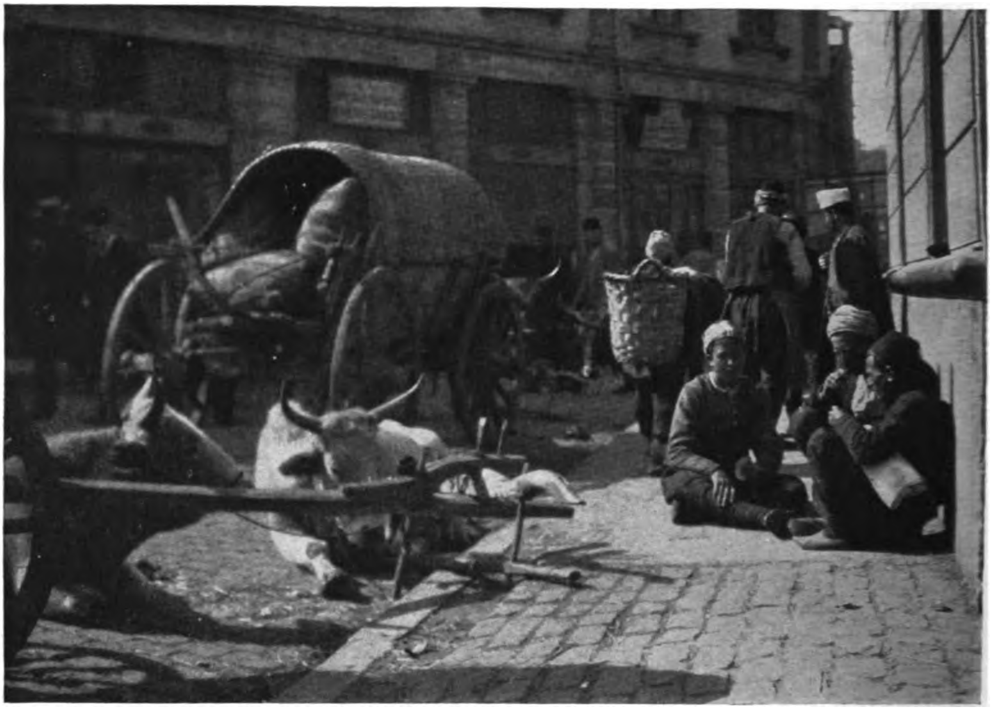
A PORTER, OR HAMAL: CONSTANTINOPLE

"Each kind of work . . . is done chiefly by men from a certain 'country.' So it is that the men who sell ice-cream in the streets are Albanians, Christian and Mohammedan, from the region of Uskub; that the layers of the pavements are Mohammedan Albanians of the south; that railroad navvies—or those of the Roumelian Railroad—are Christian Albanians from the same region; that bath men are Turks from Sivas; that street porters are Kurds or Asia Minor Turks, according to the kind of load they carry; that most boatmen are from the Black Sea coast, and so on indefinitely."

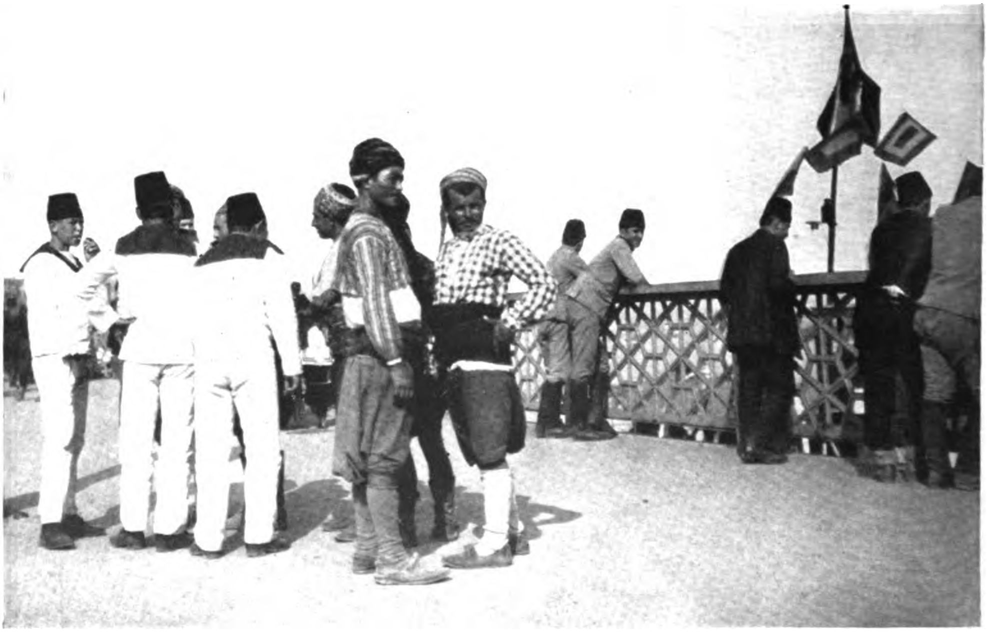
THE LIGHTERMEN'S GUILD

During the unpleasantness with Austria which followed the annexation of Bosnia and Herzegovina, and that with Greece which preceded the Balkan war, they declared a boycott of Austrian and of Greek commerce, which no mere money inducement could persuade them to break. In this case the government was undoubtedly behind them, as it often is, for the commerce of Constantinople is almost entirely in non-Turkish hands; but the government itself finds them tough customers to tackle, and has always hesitated seriously to do so. The lightermen are all Laz, inhabitants of the ancient Colchis, in whose veins still seems to run the blood of Medea. As for the custom-house porters, they belong to the redoubtable tribe of Kürds.

The lightermen are the last of a great race to hold their heads high, and you might spend a lifetime in Constantinople without coming into contact with them; but you could hardly escape coming into contact with the porters—the *hamâls,* as they are called. Whether you arrive from abroad, or buy goods, or build a house, or move from one to another, or lay in fuel for the winter, or otherwise require to transport property, it is with *hamâls* that you deal; for they perform, on their own broad backs or by means



PEASANTS RESTING IN STREET



PEASANTS IN CONSTANTINOPLE

Photos by H. G. Dwight

Constantinople is a city of all manner of races and of tribes, which dwell beside but not among one another. Turk, Albanian, Kürd, Serb, Greek, and Armenian come from the provinces and other cities to form the Turkish capital, but they preserve there the customs, native garbs, characteristics, and languages of their kind, never assimilating to the city's type, for the city has no type. Constantinople is a babel of all of the peoples and fragments of peoples that enter into the swarming life of the Near East.

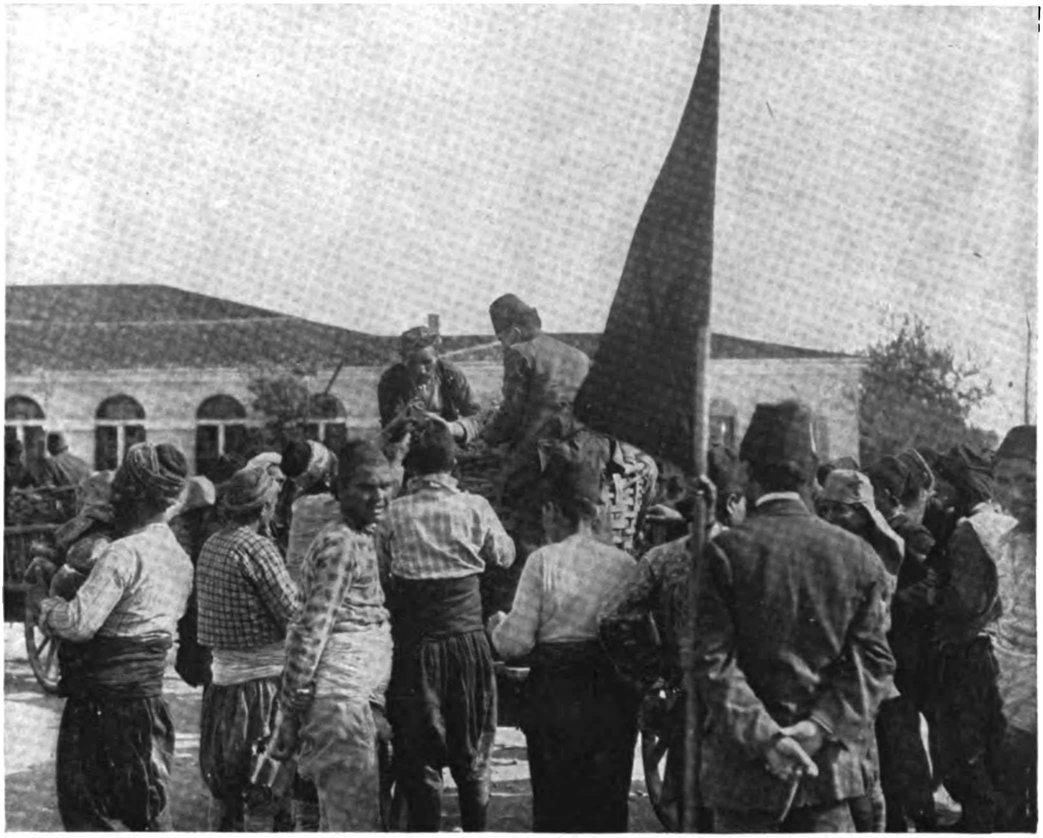
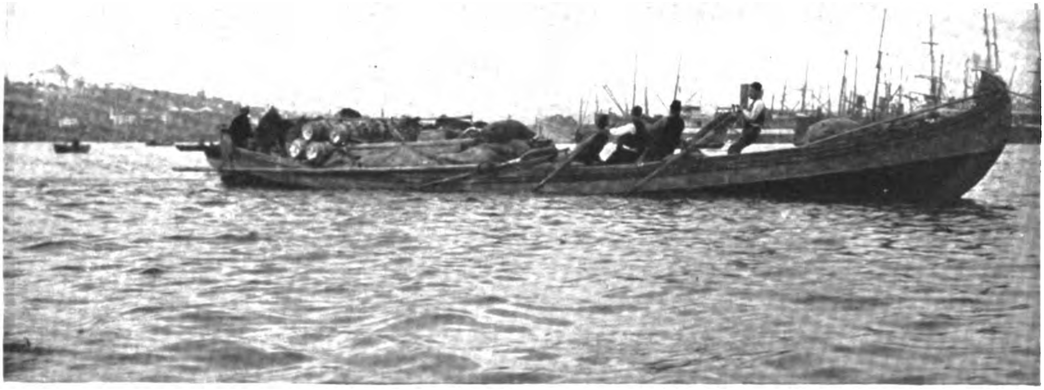


Photo and copyright by International News Service

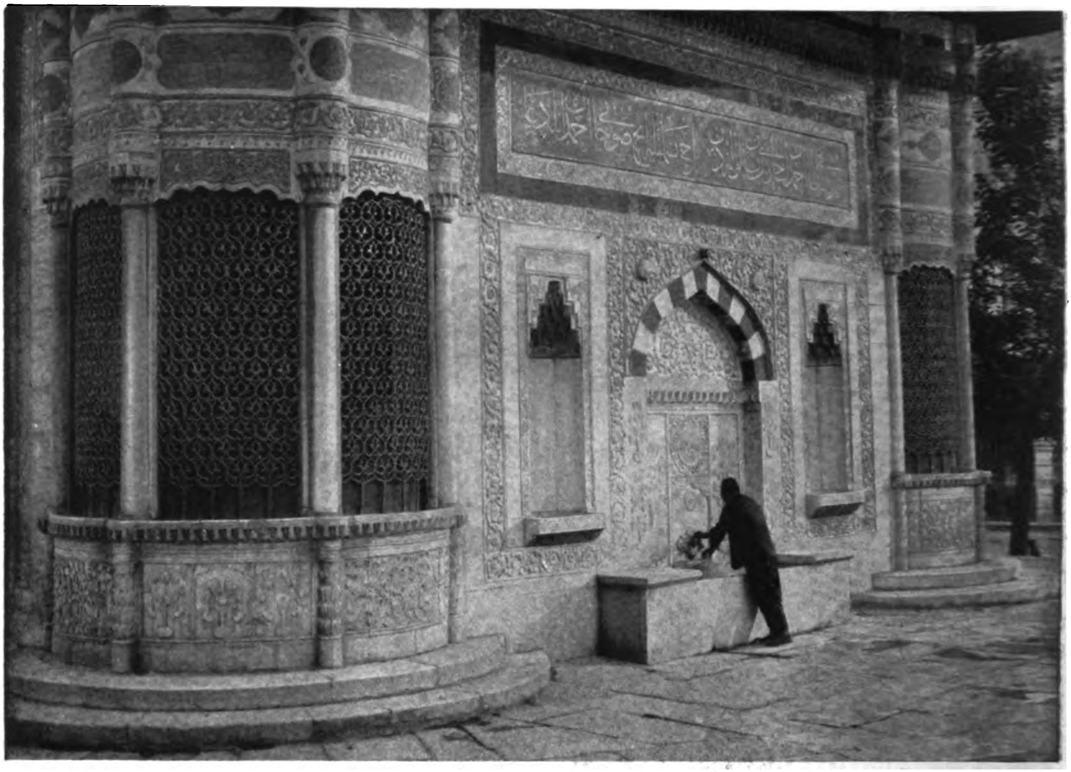
GIVING BREAD TO SOLDIERS IN WAR OFFICE SQUARE: CONSTANTINOPLE



THE WOOD-CHOPPERS' BARGE

Photo by H. G. Dwight

Every day except Friday this stately looking craft makes a journey to town (see text, page 538)



THE FOUNTAIN OF AHMED I: CONSTANTINOPLE

This fountain is the masterpiece of the many scattered over the city of Constantinople, but is typical of them all. That "unrivaled decoration of plain surfaces which forms the chief glory of Mohammedan art" here reaches its perfection. Each inscription has a hidden, as well as an apparent, meaning. On one line, for instance, there is an ingenious contrivance of characters arranged so that by adding the numeral value of successive letters one finds the year when the fountain was completed.

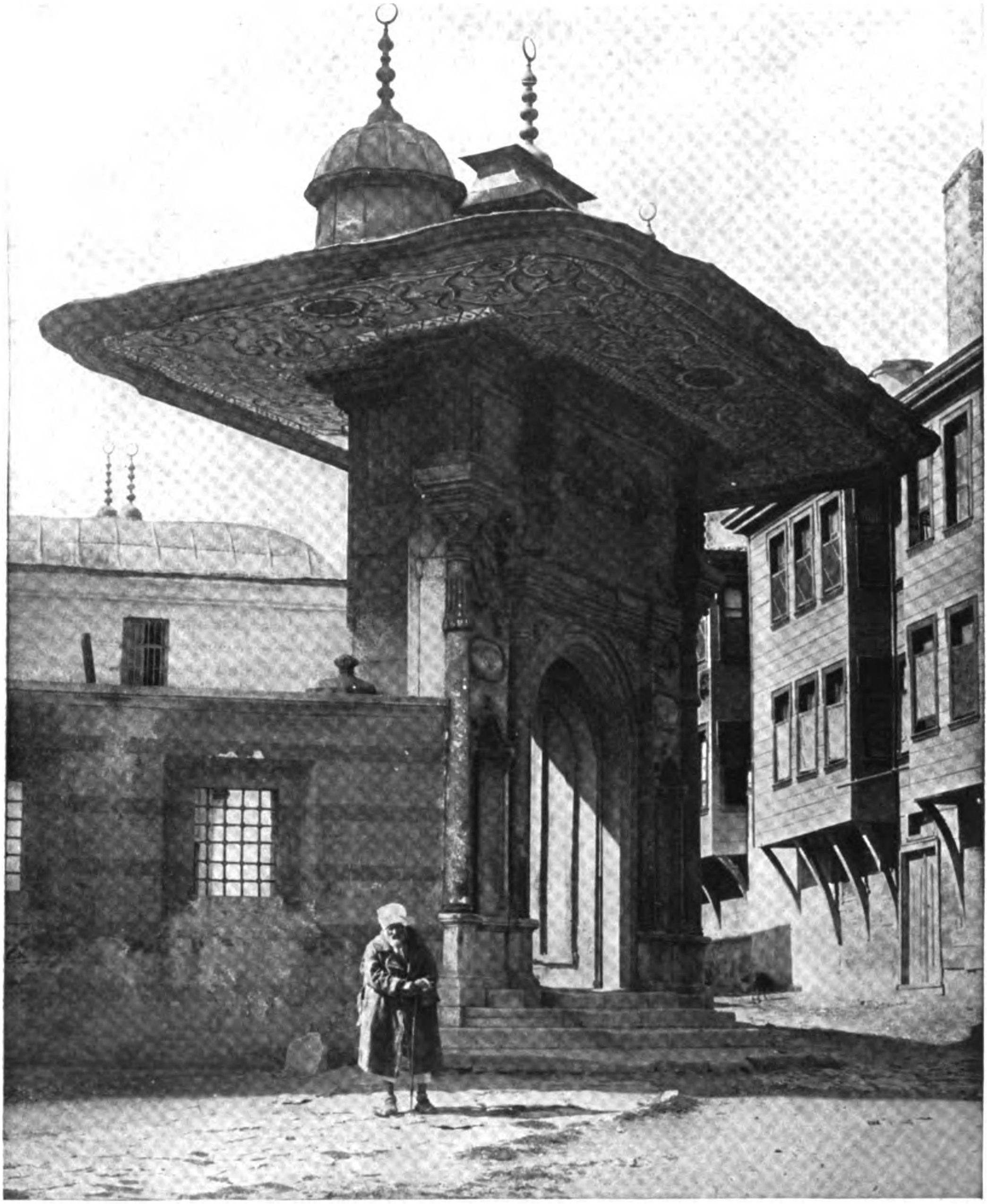
of poles between shoulder and shoulder, from which bales may be slung, almost all the fetching and carrying of a town nearly as large as Greater New York and very much hillier.

Carts do exist, drawn generally by water buffalo—slow, black, hairy creatures, with great outcurving horns—that can pull twice as heavy a load as oxen. There are also boats of various quaint kinds that perform a deliberate kind of express service. A more primitive one is carried on by private messengers, one to a district, who go back and forth between two fixed points; but *hamáls* have to load the cart or the boat and help the messenger when he has too many parcels to carry. And they have hitherto been able to defeat every attempt to establish a real delivery service in Constantinople.

THE FREIGHT HANDLERS

The custom-house *hamáls* are only a branch, if the most prosperous, of a large family. They handle all the freight that enters or leaves the custom-house by land. Cab-drivers and an inferior sort of porters are allowed to take passengers' baggage. Similarly all other kinds of transport and delivery are divided up between other categories of porters. The great majority of *hamáls* belong to sub-guilds, stationed in every quarter of the town.

The members are Turks of Asia Minor, more peaceable than their Kürdish cousins and otherwise of more savory repute. By immemorial custom it is one of their functions to be night watchmen. People engage them to guard their houses, with perfect confidence that



ENTRANCE TO MOSQUE OF SANCTA SOPHIA: CONSTANTINOPLE

Sancta Sophia stands as the world's greatest monument of Christian architecture. Professor Paparrigopoulos, the Greek historian, whose estimate is regarded as the most careful ever made, reckons the cost of ground, material, labor, ornaments, and church utensils at about $64,000,000. The common estimate of the cost of St. Peters in Rome was something less than $48,000,000. No other Christian church has at all approached Sancta Sophia in the variety and priceless value of its marbles, in the prodigal employment of gold, silver, and precious stones, and in the number and value of its sacred vessels. The expenditure for Sancta Sophia was doubtless greater than for any other sanctuary ever reared by any people to the glory of God.

nothing will be touched, and members of the guild patrol the streets of their quarter at night, beating the hour on the pavement with their clubs. Since the new régime some attempt has been made to curb their ardor in this respect; but they still give warning of any fire that may take place. If the smallest blaze be reported from the most distant suburb, every *bekjí* in Constantinople goes through his beat bawling at the top of his voice: "There is a fire!" going on to announce where it is. The sound is eery enough to hear in the dead of night, as one starts from a sound sleep.

THE RIGHT TO CHOP WOOD

Another customary right of *hamáls* is to chop up whatever fire-wood may be bought in their quarter. The saw is an instrument unknown to them. In the villages of the Bosporus they also maintain a barge called a *pazár kaïk,* in which they stand to the heavy oars, falling with them on the stroke. Every day except Friday this stately looking craft, with its fine incurving bow, makes a journey to town, and the *hamáls* afterward distribute its return freight on their backs. To this end they wear a sort of hump of sole leather, suspended from their shoulders by two arm holes. The strength of these men is something prodigious. They make nothing of carrying two good-sized trunks for a mile or two. I have even known of one man carrying on his back an ordinary piano.

THE MEN WHO MOVE YOU

It is really another sort of man, however, who enjoys the privilege of carrying pianos. You will receive new light on the complicated subject of porters if during your sojourn in Constantinople you have occasion to move. No experience of that calamity that you have gained in other countries will be of the slightest service to you here. Do not imagine that you can get any one to do it for you, packing your furniture into padded vans and setting it up in your new house ready for use. Still less imagine that you can do it yourself, even though you have carts and porters of your own.

If your own men start to take your own furniture out of your own door to your own cart they will be stopped—by the firemen of the quarter, if you please. These are a race of beings well-nigh as formidable as the custom-house *hamáls* and the lightermen. They do not happen to be of any one race. Some of them are Turks, some of them are Greeks, some of them are even Armenians or Jews. It depends on the district they come from. I suppose they have gained a common character from the fact that they are young and not too fastidious members of society, whose true element is tumult and disaster.

Just what firemen have to do with moving may seem highly problematical to the householder anxious to transfer his lares and penates. He will find to his cost, however, that they have a good deal to do with it. They move furniture when there is a fire. Since, therefore, there are unhappily not fires enough to give them constant employment, they claim the right to move furniture whenever furniture is to be moved; and they obtain the right.

But mark that each company does it only in his own quarter. If you move into a district ruled by a second set of firemen they insist on unloading your furniture and carrying it into your new house—while, perhaps, your own men stand by with folded hands. If they use their hands at all it becomes a question of fists; and the police have no redress to offer you. The matter, you see, is one into which custom enters—that *adét* which is all powerful in Turkey.

THE CITY'S PUMP-MEN

For a long time Constantinople had no other firemen than these *touloumbajís,* as they are called—pump-men. Now there is a military fire brigade, but it is far too small and its cumbersome engines fare ill in the steep and narrow streets. The irregulars still flourish, accordingly, and contribute not a little to the local color of the place as they hoot half naked to a fire.

Unlike most firemen, they go bareheaded and barefooted, led by a man swinging, in the daytime, a brass wand,

VIEW OF THE OLD BRIDGE AND THE AZAB KAPOU: CONSTANTINOPLE

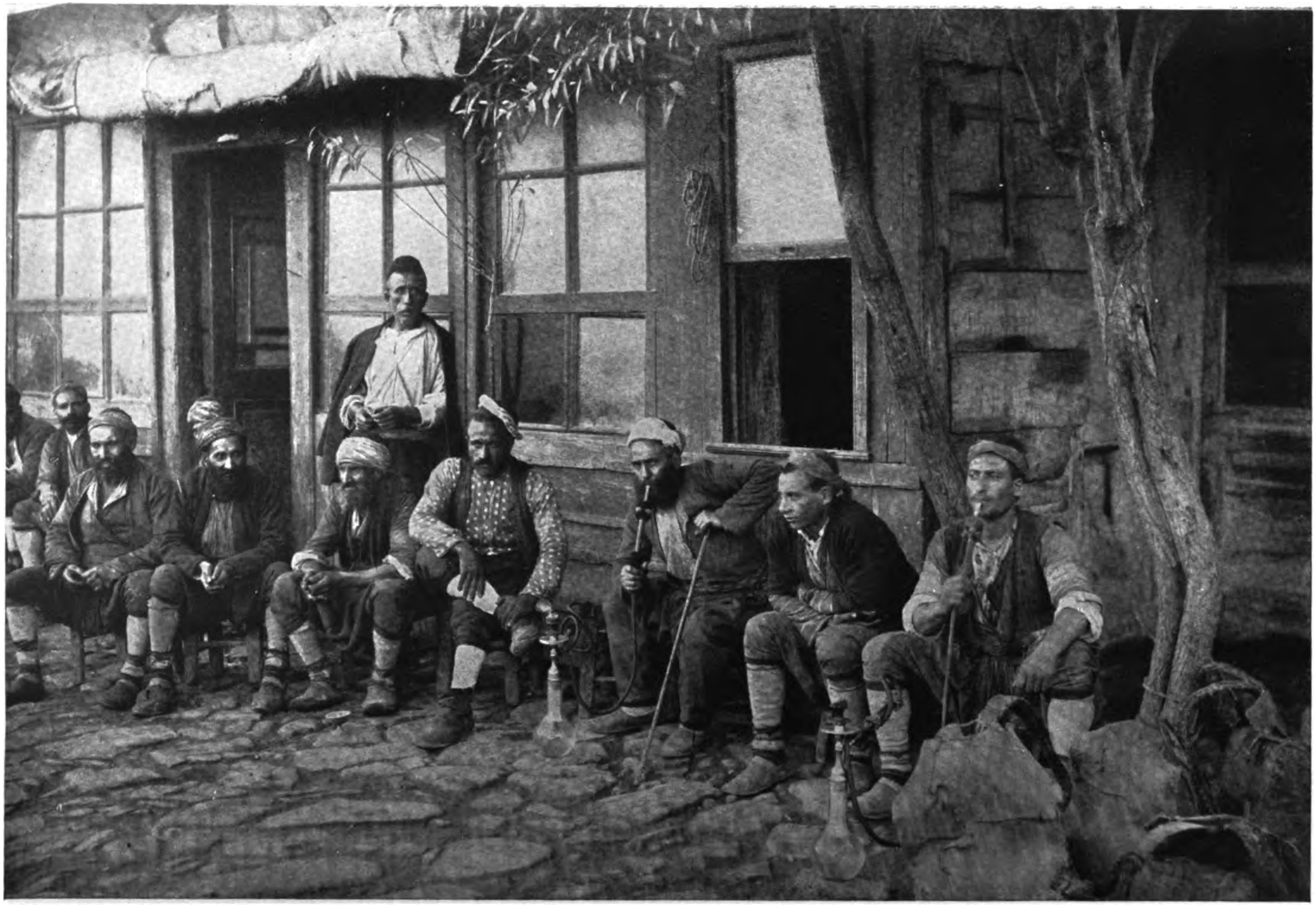
and at night a big white linen lantern. Their apparatus is of the simplest, consisting of a hand-pump mounted on a wooden box of no great size, with two poles at each end, which rest on the men's shoulders as they run. They run phenomenal distances sometimes; it may be to find the fire out, or the local firemen in control. If the fire is too large for the true firemen of the quarter, outsiders are free to come in. They do not do so for love, however.

If your house is threatened, they naggle with you to save it if they can, or, if they can't, to save the furniture. You may imagine that a bargain concluded amid flying brands is not always to their disadvantage, especially if no other fire company is by to make competition. The help they give is rather problematical. The stream of water they can turn on a blaze is very thin, even if it be continuous, which, unfortunately, it rarely is. They have a curious superstition against using sea water, imagining that it makes a fire burn more fiercely; and they have the name of being arrant thieves. But they are capable of great daring, and, with proper training and regular pay, they would make excellent timber for a fire department.

I am tempted in this connection to speak of the water system of Constantinople. Like so many other local institutions, it is neither one thing nor the other, part of the town being served by water mains and part depending on the old public fountains.

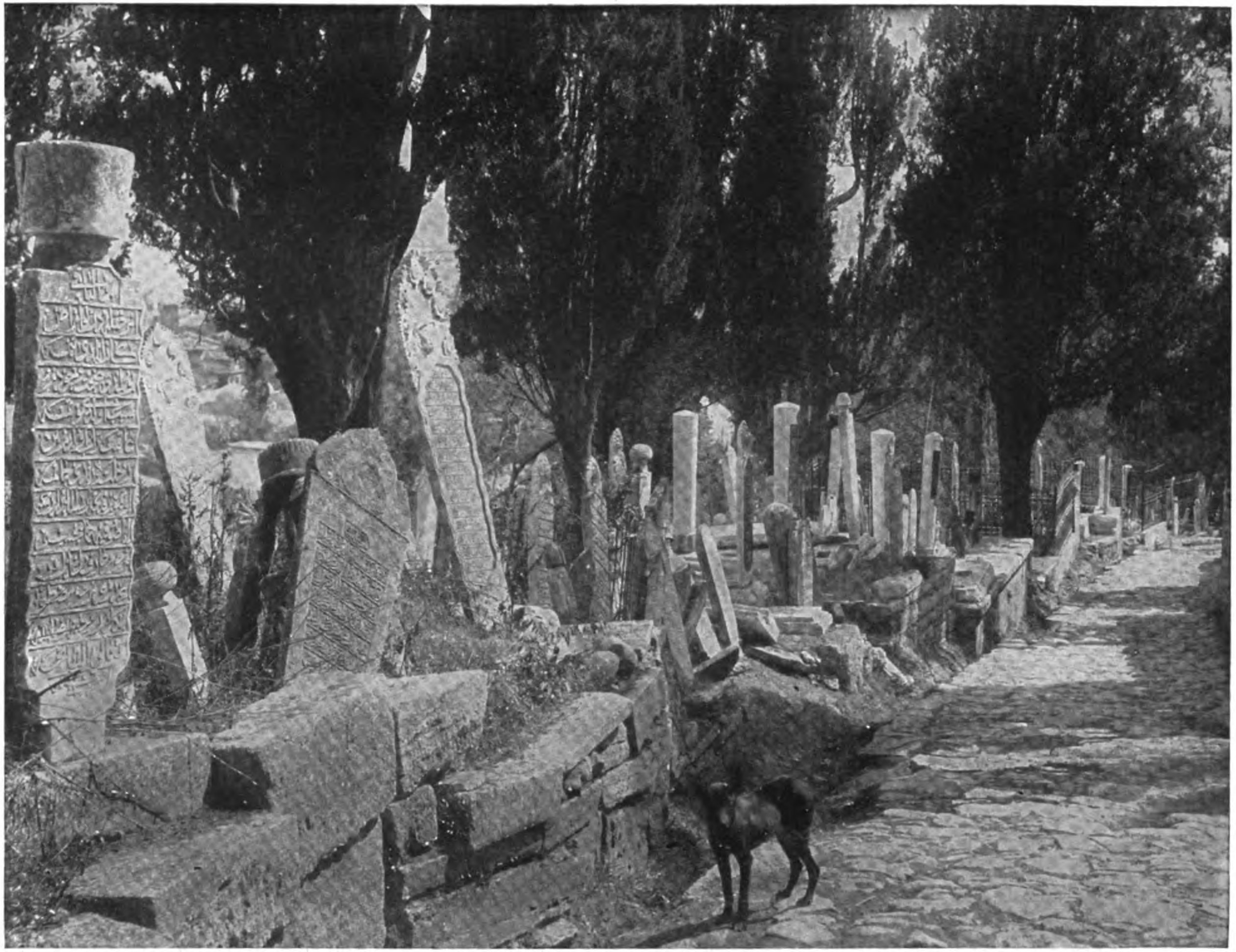
PLENTY OF TIME—FOUR CALENDARS

And there would still remain any number of other points that make life characteristic and colored in a city that religiously follows four calendars, that prefers to regard 12 o'clock as falling at sunset, and that has so far happily succeeded in remaining superior to the proverbial relation between time and money.



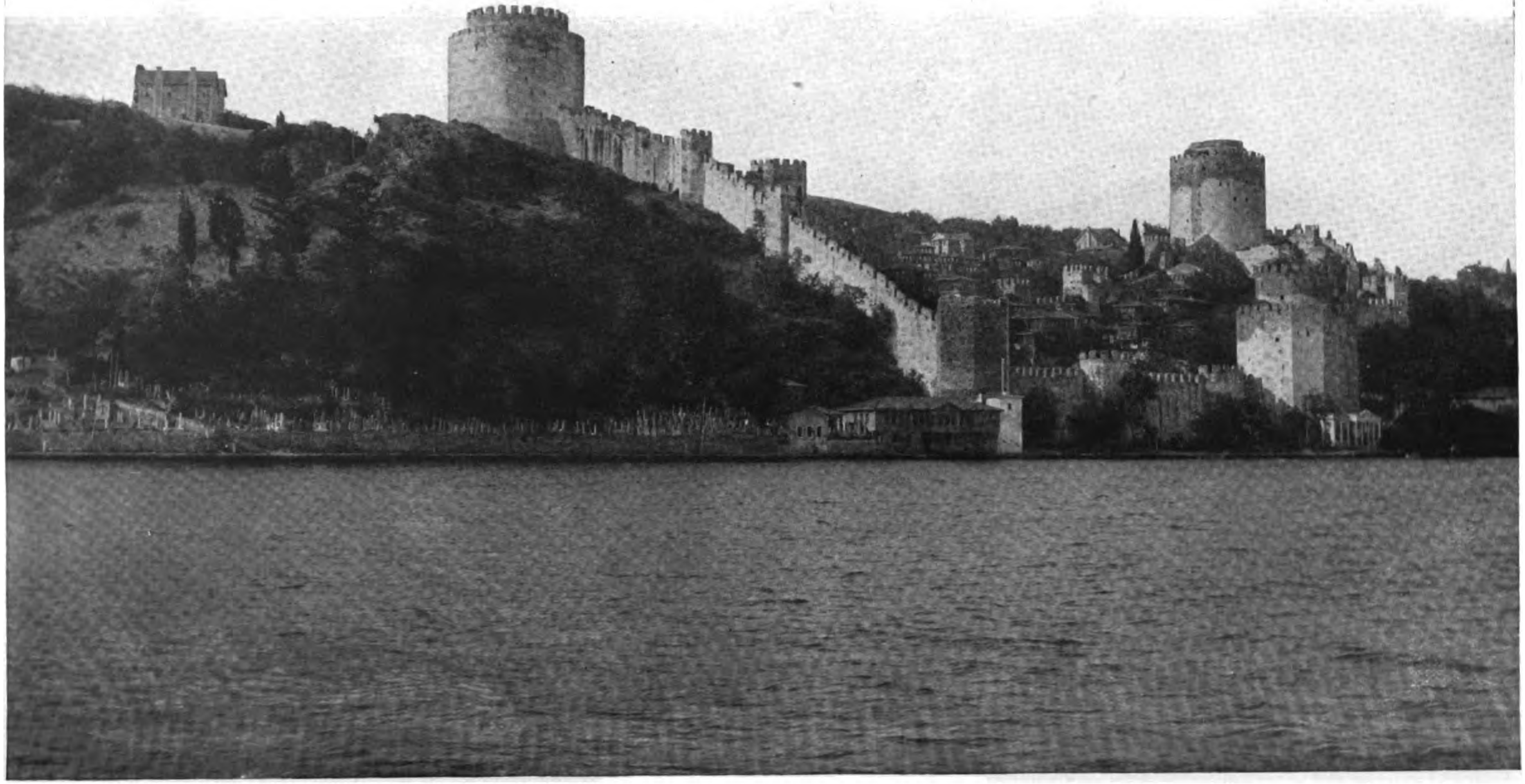
A QUIET HOUR AMONG THE WORKMEN: CONSTANTINOPLE

The hamals or guilds of Constantinople have ironclad rules which neither the government nor the people dare violate. For instance, the firemen's hamal has the right to move furniture. No householder may move his furniture with his own employees, but must turn it over to the hamal; and if he moves from one quarter of the city to another, one hamal must move the furniture out of the house he is leaving and another must take it into the house he is to occupy.



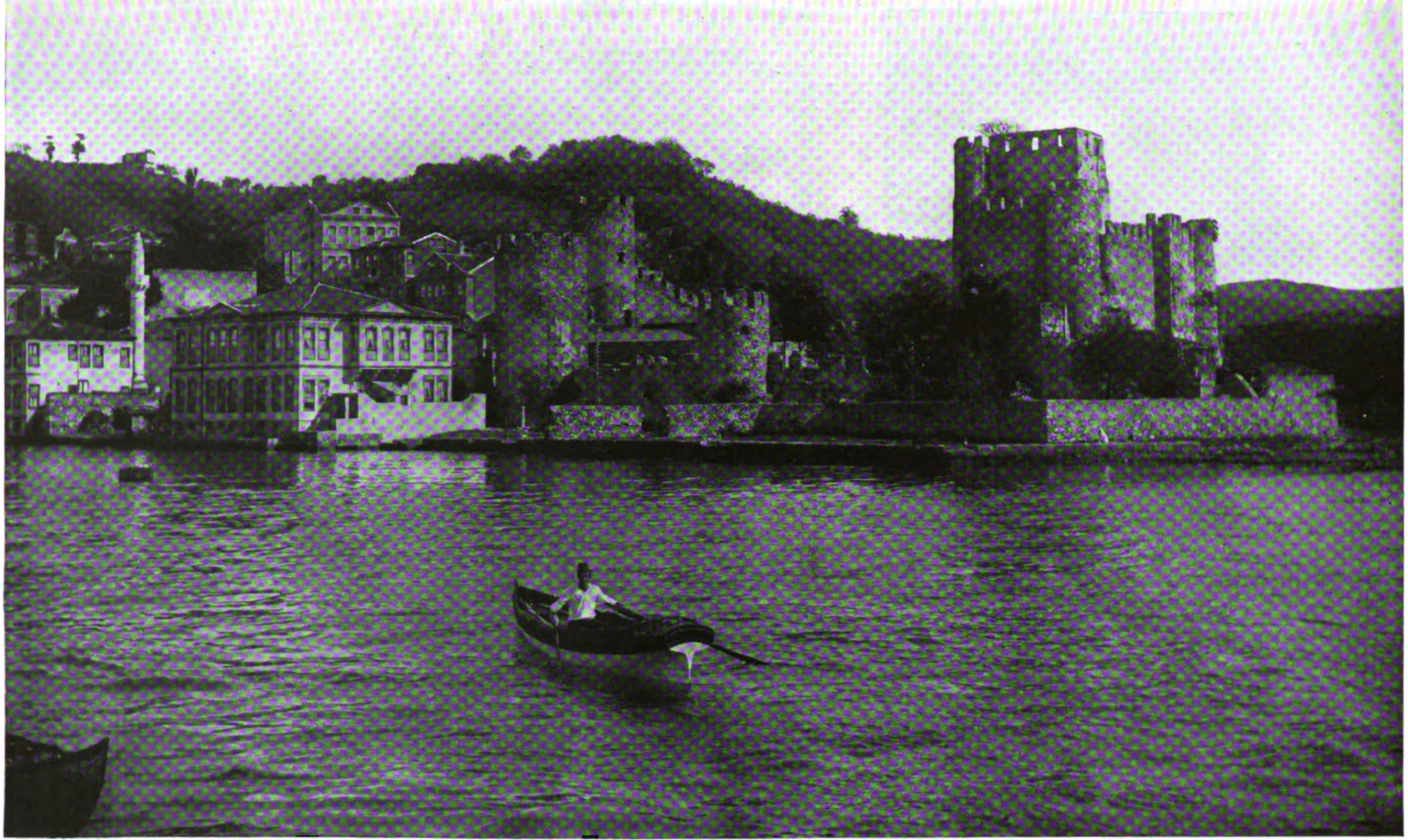
A TURKISH CEMETERY IN CONSTANTINOPLE

It is said that the largest Moslem cemetery in the world, which is described as "a wilderness of tombs, covering with its thousands of high, motionless, funeral trees the loftiest elevation in the city," is to be found in Scutari, just across the Bosporus from the Golden Horn



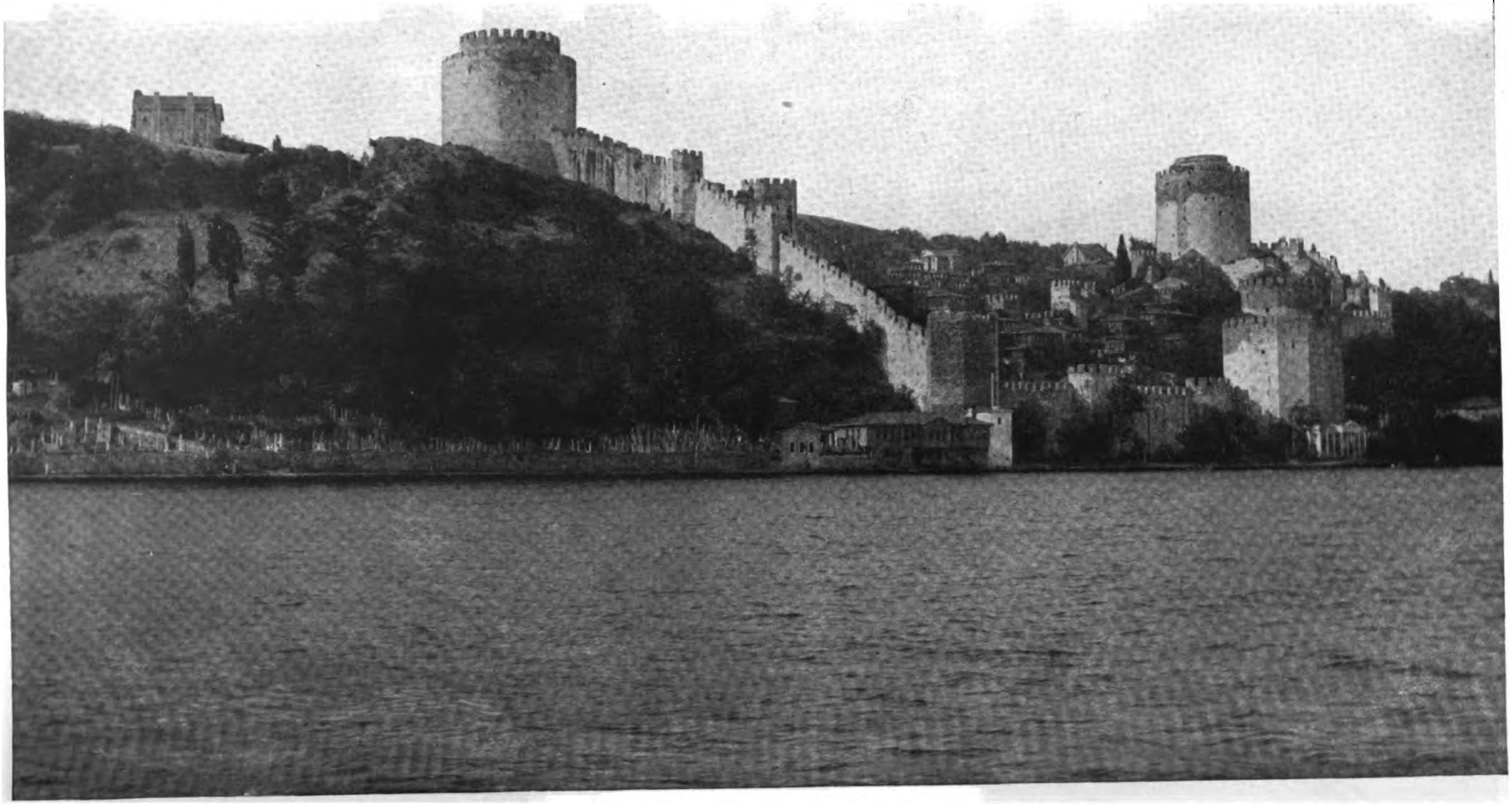
THE "CASTLES OF EUROPE": BOSPORUS

The "Castles of Europe" and the "Castles of Asia" are at Roumeli Hissar and Anadoli Hissar respectively, at the narrowest point on the Bosporus. Here Darius crossed the strait on a pontoon bridge to launch his attack upon the Scythians, and Asiatic foot first touched European soil. The castles on both continents have long since been obsolete as fortifications, but they still stand as the largest and mightiest that Ottoman hand ever reared.



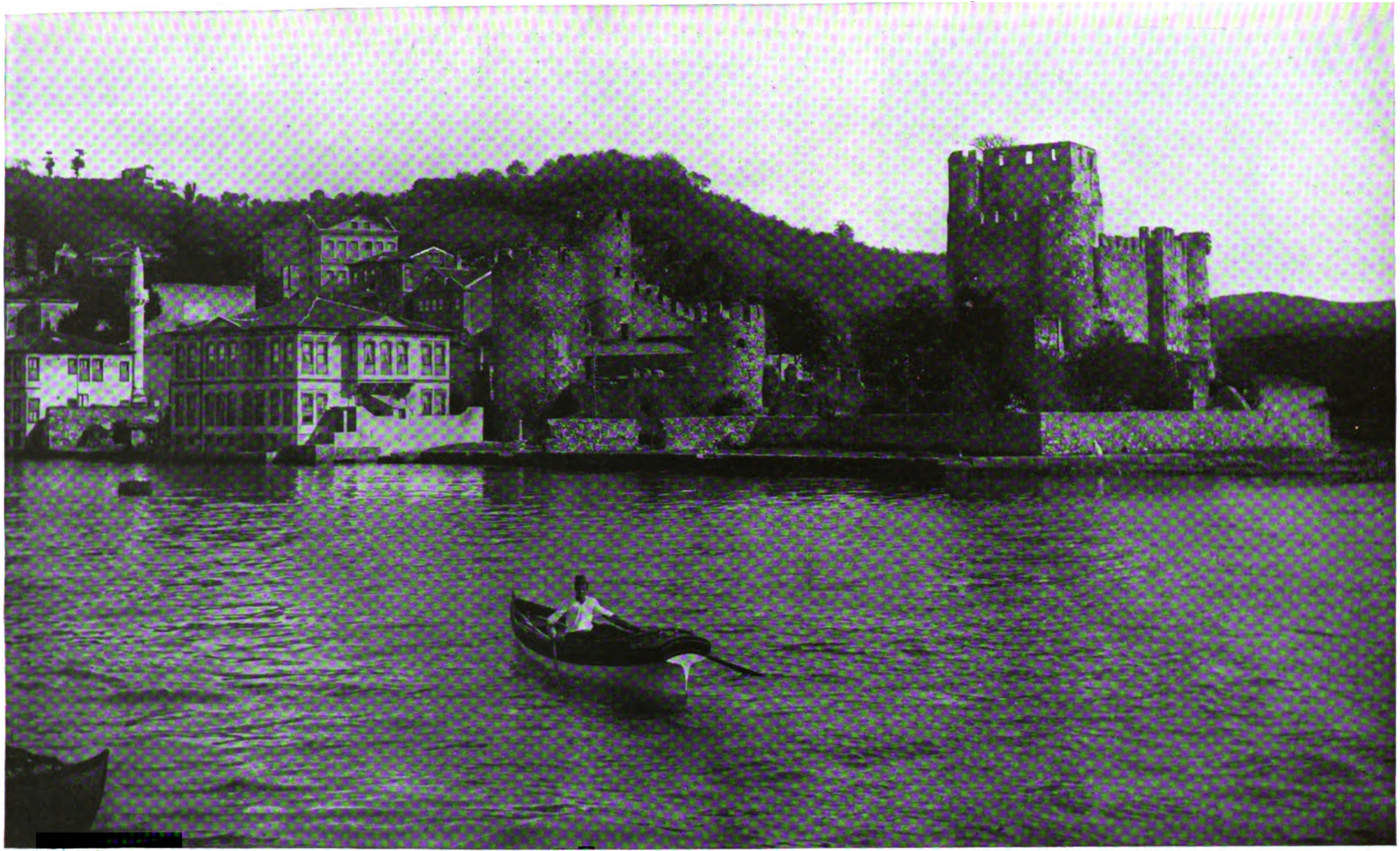
THE "CASTLES OF ASIA," BOSPORUS: THIS ANCIENT FORT IS DIRECTLY OPPOSITE THE FORT SHOWN ON THE PRECEDING PAGE

"An Italian professor asked me once if there were any one official language for the American 'Parliament,' or whether each member spoke in his own. The professor was much surprised when I told him that no member had any other tongue than English, and I think he thereafter began to consider our country as a sort of western Austria-Hungary, in which a vast *Italia irredenta,* together with Germanies, Polands, Scandinavias, and other east provinces, were domineered by a powerful oligarchy of Anglo-Saxons" (see text, pages 521 and 523).



THE "CASTLES OF EUROPE": BOSPORUS

The "Castles of Europe" and the "Castles of Asia" are at Roumeli Hissar and Anadoli Hissar respectively, at the narrowest point on the Bosporus. Here Darius crossed the strait on a pontoon bridge to launch his attack upon the Scythians, and Asiatic foot first touched European soil. The castles on both continents have long since been obsolete as fortifications, but they still stand as the largest and mightiest that Ottoman hand ever reared.



THE "CASTLES OF ASIA," BOSPORUS: THIS ANCIENT FORT IS DIRECTLY OPPOSITE THE FORT SHOWN ON THE PRECEDING PAGE

"An Italian professor asked me once if there were any one official language for the American 'Parliament,' or whether each member spoke in his own. The professor was much surprised when I told him that no member had any other tongue than English, and I think he thereafter began to consider our country as a sort of western Austria-Hungary, in which a vast *Italia irredenta*, together with Germanies, Polands, Scandinavias, and other east provinces, were domineered by a powerful oligarchy of Anglo-Saxons" (see text, pages 521 and 523).

A TURKISH FORT IN THE DARDANELLES

If the practical side of life in Constantinople still has its medieval aspects, it is not less so in other ways. Here, again, the sojourner needs all his humor and adaptability and the power of finding amusement in simple ways, for he will find very little in the way of formal amusement. One can practically say that there is no theater. The Turkish theater is to be seen during one month of the year only, and few Europeans would wish any more of it! While the Greek theater is really very good, it is not indigenous, being supplied from Athens, and not many Europeans are capable of appreciating it; and the European colony, large as it is, is too divided to support a good theater in any one language. A wandering star from Paris fills a house for a few nights every season; but the only stage that really flourishes, and that not too prosperously, is the music hall.

NEAR EASTERN MUSIC

In music matters are even worse. The reason, of course, is much the same—the profound cleavage between the real music of the country and the more fashionable imported music of the West. For myself, I do not share the opinion of most Europeans, that Oriental music is merely discord and inanity. A few Russian composers have used Asiatic themes to great effect, and I can imagine some Greek genius, perhaps, formed in the schools of the West, but steeped in the melancholy folk-music of the Levant, discovering a whole new world of music. As yet, however, Constantinople is far from ready for such a man; and in the meantime the few votaries of sound who happen to be there feed their souls on tinny bands and traveling Austrian or Italian operettas. A stray virtuoso or a good string quartette occasionally gives a performance or two in Pera; but a decent symphony orchestra has never been heard in Constantinople.

Along other lines the resources of Constantinople are even more limited. Such a thing as a picture gallery is unheard of, and still less a collection of sculpture. There is, however, the imperial museum, containing a small but excellent choice of classic and Byzantine marbles, of Assyrian and Hittite antiquities, and of Turkish works of art. I must not forget, either, the collection of arms which the late Grand Vizier Mahmoud Shefket Pasha made available to the public. It is most primitively classified and labeled, but at least it is there for the experts of a later day to arrange.

PUBLIC LIBRARIES

Public libraries have long existed in Constantinople—of a kind—and outsiders may be surprised to hear that all of them are Turkish. The trouble with them is that they are largely independent of each other and contain very little except for the Orientalist. They were all formed and endowed at a time when learning for a Turk consisted in the Koran, its commentaries, the chronicles of the Empire, and the Turkish and Persian poets. Of classic or foreign literature, or of works of reference and research, they contain practically nothing, while to very few of them has a book been added since the day they were opened. Even these little libraries are lacking among the non-Moslem peoples of the city. They, like the Europeans, have access to no other libraries than the very inadequate ones of a few institutions, and then not too easily.

Mr. Carnegie is doubtless too busy planning new philanthropies to read magazines; but if any one who knows him should happen to see this page, let him suggest to the Father of Libraries that no library he ever gave was so badly needed as is a modern public library in Constantinople today, fairly complete at least in French, German, Greek, and Turkish literature of all classes. But it should be fully endowed, in order to do its best work of serving as a model and school of its kind.

NOT GIVEN TO SPORTS

As for sport, there is a little more to be said. The one real Turkish sport is wrestling. The wrestlers wear loose leather breeches; they oil themselves from top to toe, and they permit any kind of hold that will bring a man down. Gentlemen, accordingly, do not indulge in so ungentlemanly a pastime!

Unfortunately for their own stock, they are not greatly inclined to indulge in any other, though the Young Turks are attempting to arouse interest in races and games. It will be some time before such novelties really become acclimated among men who love above all things to sit under a tree and roll cigarettes. But this is a matter in which people are able to please themselves without much organization or outlay, and Europeans find Constantinople an excellent theater for riding, hunting, games, and water sports. In the lack of other diversions, walking, exploring of various kinds, even mild archeologizing, become serious forms of distraction.

The city itself, with all its historic and human interest and the infinite variety of its surroundings, is after all the great resource. People usually imagine Constantinople to possess that vague advantage known as a Mediterranean climate.

NOT A PLEASANT CLIMATE

They forget that it has the Black Sea at its back, and behind that the steppes of Russia. Winter in Constantinople is long and disagreeable, not because of its cold, which is rarely severe, but because of its darkness and penetrating dampness. There may be a late Indian summer and there may be spring days in February; but you cannot count on the sun between October and April. Those six months are really a rainy season, only less rainy than in tropical countries.

And summer is correspondingly dry, when showers are rarities and hillsides scorch brown. The summers are not hot, however, in our American sense; the Black Sea looks to that. A Constantinople summer is cooler than a Delaware, a New Jersey, a Long Island, or, I fancy, than a Massachusetts summer. The Bosporus is never so cold in July and August as the Atlantic can be north of Cape Cod; but, on the other hand, I have never seen the temperature of the shores of the Bosporus so high as I have seen it on the north shore or even on the coast of Maine. Altogether, Constantinople has the makings of a magnificent summer resort—though I am not sure, I hope the world will find it out.

WHERE ADAM AND EVE LIVED

BY FREDERICK AND MARGARET SIMPICH

BAGDAD! What a magic word to conjure with! How it hints at romance, adventure, intrigue! No place in all the ancient East stood out so splendidly. No tales can compare with the "Arabian Nights," the old tales of Bagdad. From childhood the name of the mystic city and its famous Caliph, Harun-al-Rashid, have been familiar words to us all.

But how many Americans know just where Bagdad really is or how important it has lately become?

When word came that I must go to Bagdad I lost days getting "routed," as the tourist agents call it. A through ticket from America to Bagdad is hard to buy. It is much easier to be routed all the way round the world—along the beaten trail. Even on the Atlantic steamer the word "Bagdad" stamped on my ticket seemed to confuse folks. When the purser read it he scowled and was puzzled; later I heard him tell a boy—in low tones—to bring an atlas. He was brushing up on geography, locating Bagdad (see map on another page).

The road to Bagdad, you will admit, is devious and long. My ticket was good for one continuous ride from New York to Egypt, over Pharaoh's bones in the Red Sea, past Cain's tomb at sun-scorched Aden, to Colombo, Bombay, Karachee, Maskat, old pirate haunt and ancient stronghold of Albuquerque, the Portuguese; thence up the boiling Persian Gulf, past Sinbad's treasure island of Hormuz, to Busra, the "Balsora" of the "Arabian Nights;" and, lastly, 500 miles up the winding Tigris, past the reputed tomb of the prophet Ezra—shrine of Jewish hordes—to Bagdad! Seventeen thousand miles from San Francisco, my starting point; five changes of ships, two months of travel!*

HERE, THEN, IS BAGDAD

Here, then, is Bagdad — in Turkish Arabia, near the Persian frontier, hard by old Eden, man's birthplace. Here on the classic soil of Babylon, Nineveh, and Opis once flourished the pick of the human race; here was the center of the world's wealth, power, and civilization. And back to this ancient region modern men are turning, to reclaim its lost areas, open its mines and oil deposits—to restore the Garden of Eden!

From the deck of a Tigris steamer Bagdad looms up boldly, its splendid skyline of domes and minarets reminding one of some "Midway" of World's Fair memory. An odd pontoon bridge connects the two parts of the city, separated by the yellow Tigris. On the west bank is the old town, inclosed by date and orange groves. From here the new Bagdad-Aleppo Railway will start on its long run across the trackless desert. East of the river, on the Persian side, is "new" Bagdad, with its government offices, barracks, consulates, prisons, etc. Here, too, is the great government factory, where uniforms, blankets, turbans, and other soldiers' supplies are made.

Beyond, as far as the eye can reach in every direction, stretches the vast, flat, treeless, empty plain of Mesopotamia—a region once more populous than Belgium.

THE GOOFAH AND THE KELEK

I was paddled ashore from the steamer in a "goofah," a queer, coracle-like craft in use here since Jonah's day. A goofah is woven from willows about 6 feet in diameter, is perfectly circular and basket-shaped, and is coated outside with bitumen. Some say Moses was cut adrift in one of these goofahs (see page 549).

Another strange craft at Bagdad is the "kelek," a Kurdish invention. The kelek is a raft made of inflated goatskins, held together by poles and covered with a platform of straw mats. These keleks come down to Bagdad in hundreds from Mosul, bringing wool, pottery, grain, and skins (see page 548).

---

* Europeans going to Bagdad sometimes travel by rail to Aleppo, and from there make a three-weeks' caravan journey over the desert to Bagdad; but disturbances among the Bedouins often render this route very dangerous; the journey is also possible only during the cooler months. Most travelers reach Bagdad via Suez, Bombay, etc.

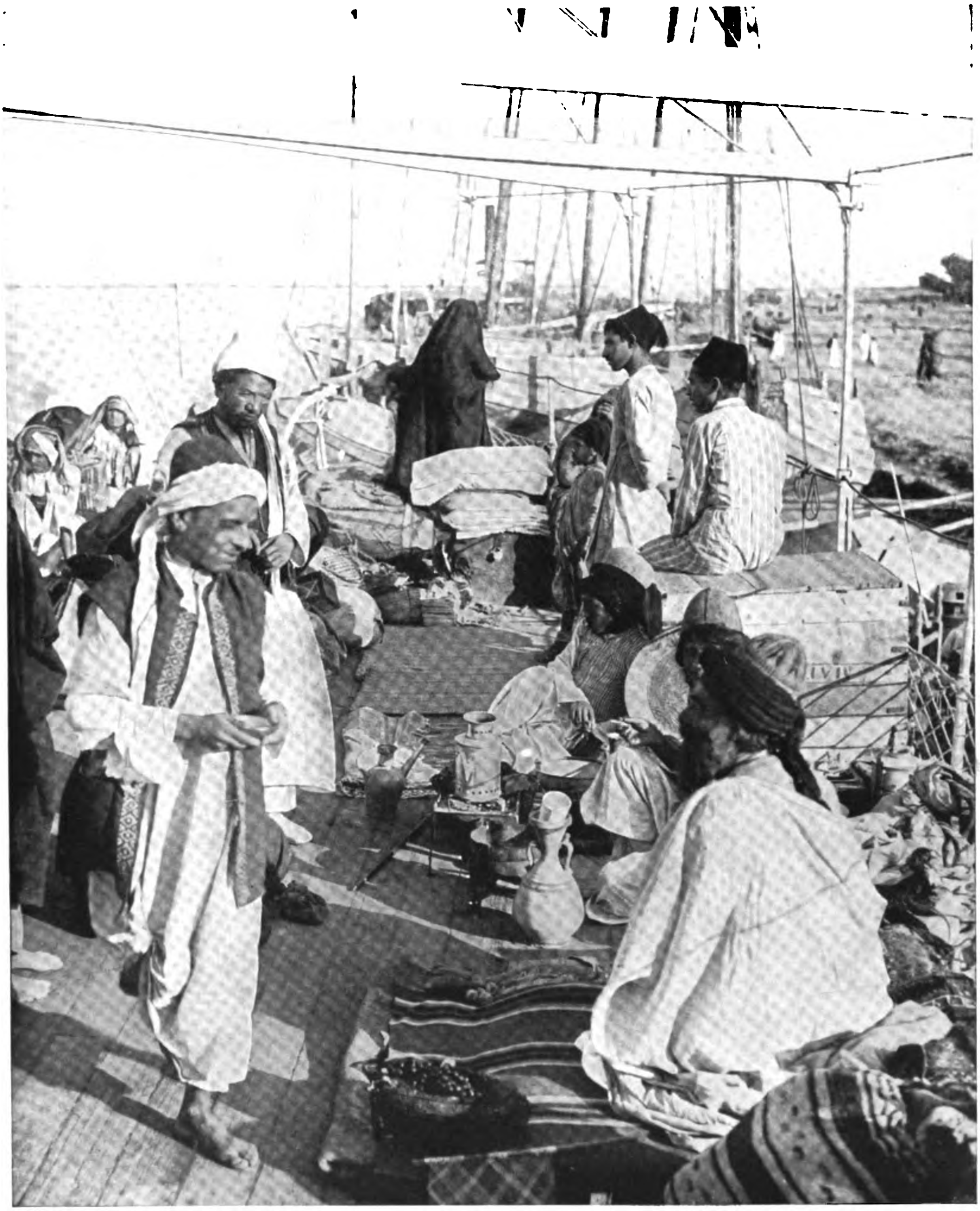


Photo and copyright by Underwood & Underwood

LIFE AMONG THE ARAB PASSENGERS ON A TIGRIS STEAMER, BOUND FOR BAGDAD

"Bagdad is in Turkish Arabia, near the Persian frontier, hard by old Eden, man's birthplace. Here on the classic soil of Babylon, Nineveh, and Opis once flourished the pick of the human race; here was the center of the world's wealth, power, and civilization. And back to this ancient region modern men are turning, to reclaim its lost areas, open its mines and oil deposits—to restore the Garden of Eden" (see text, page 546).

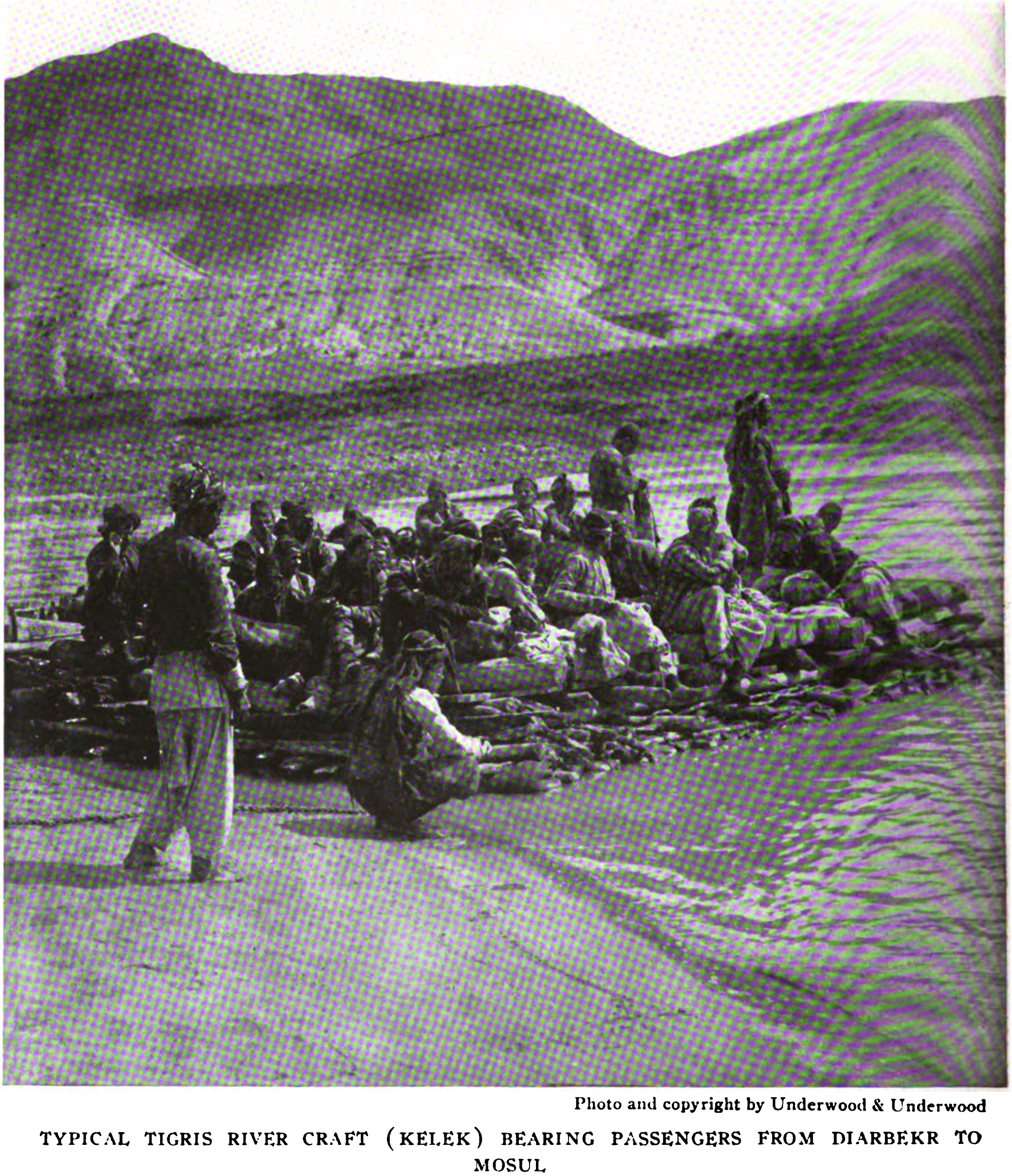


Photo and copyright by Underwood & Underwood

TYPICAL TIGRIS RIVER CRAFT (KELEK) BEARING PASSENGERS FROM DIARBEKR TO MOSUL

"A strange craft at Bagdad is the 'kelek,' a Kürdish invention. The kelek is a raft made of inflated goatskins, held together by poles and covered with a platform of straw mats. These keleks come down to Bagdad in hundreds from Mosul, bringing wool, pottery, grain, and skins" (see text, page 546).

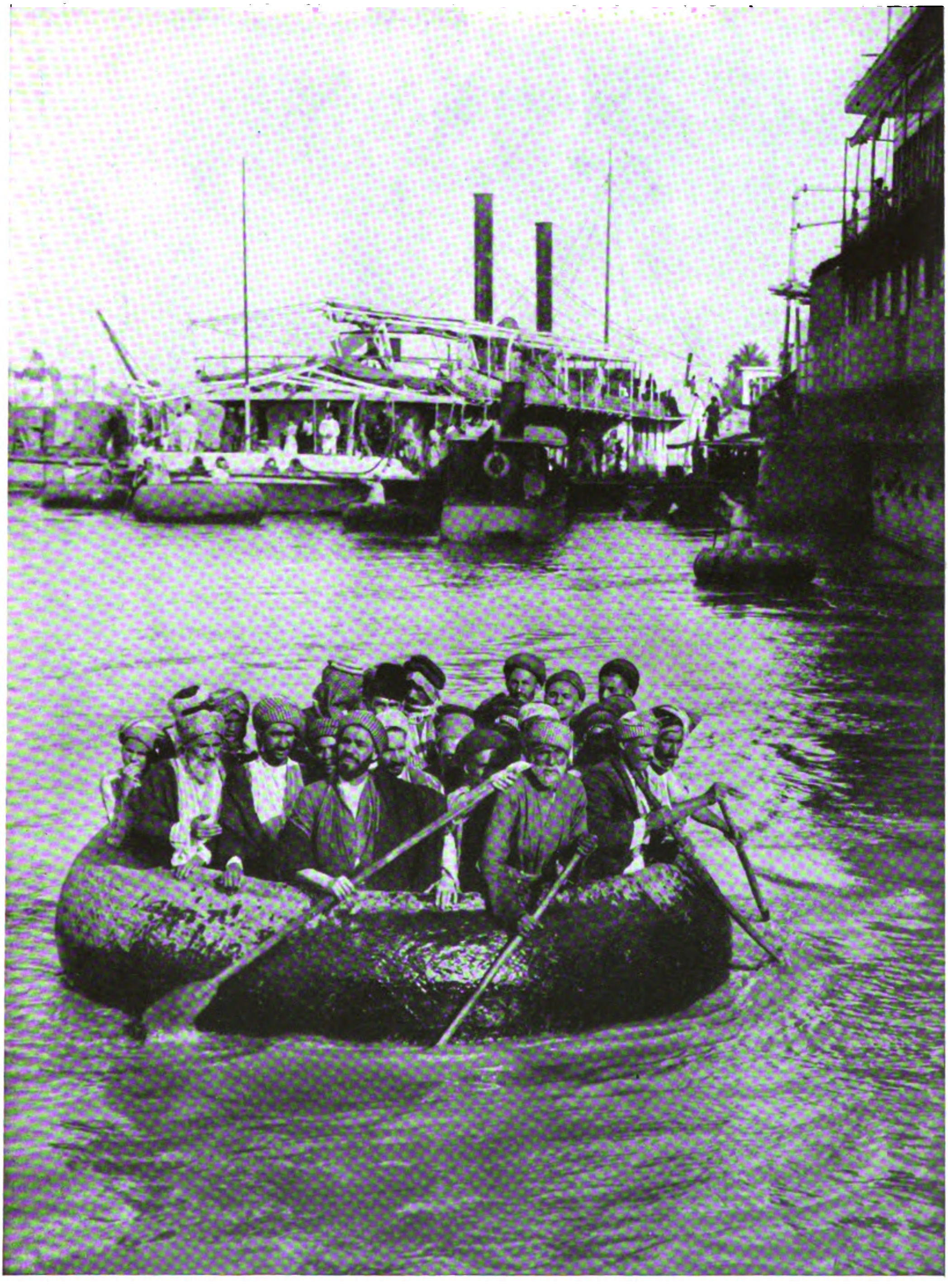


Photo and copyright by Underwood & Underwood

LANDING FROM THE STEAMER: BAGDAD

"I was paddled ashore from the steamer in a 'goofah,' a queer, coracle-like craft in use here since Jonah's day. A goofah is woven from willows about 6 feet in diameter, is perfectly circular and basket-shaped, and is coated outside with bitumen. Some say Moses was cut adrift in one of these goofahs" (see text, page 546).

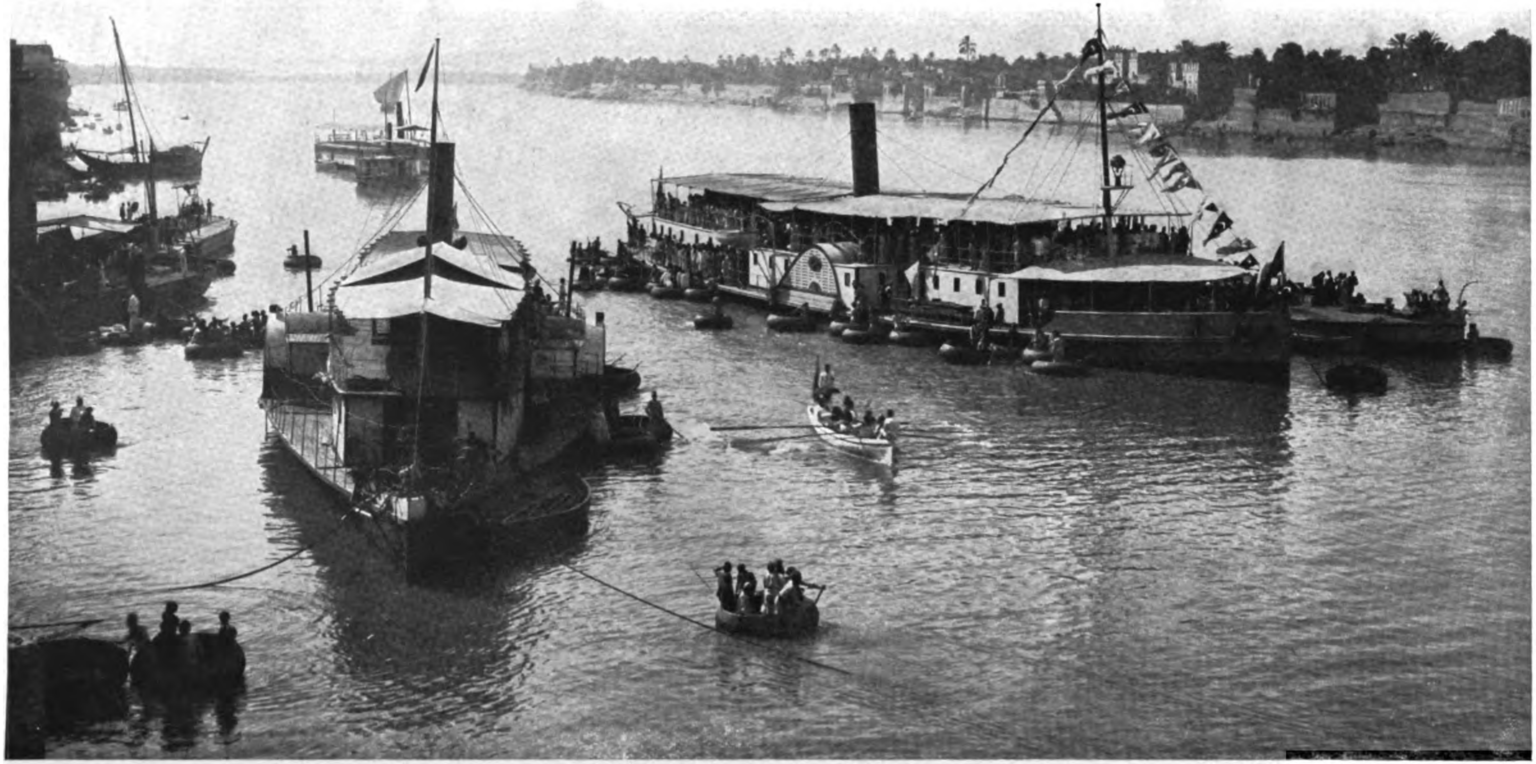


Photo by Frederick Simpich

UP-TO-DATE STEAMERS PLY THE TIGRIS RIVER FROM BAGDAD TO THE SEA, 500 MILES AWAY: NOTE THE ROUND BOATS, OR GOOFAHS, BRINGING PASSENGERS ASHORE AND THE DOZEN AND MORE SURROUNDING THE RIVER STEAMER

"Bagdad was for centuries the capital of the whole Mohammedan world, visited annually by shahs, nawabs, and Indian princes; it was a maelstrom of vice, so weakened by its own excesses that when Halagu, grandson of Jenghiz Khan, swooped down upon its carousing nobles, they fell stupid victims to his Tatar ax" (see text, page 552).

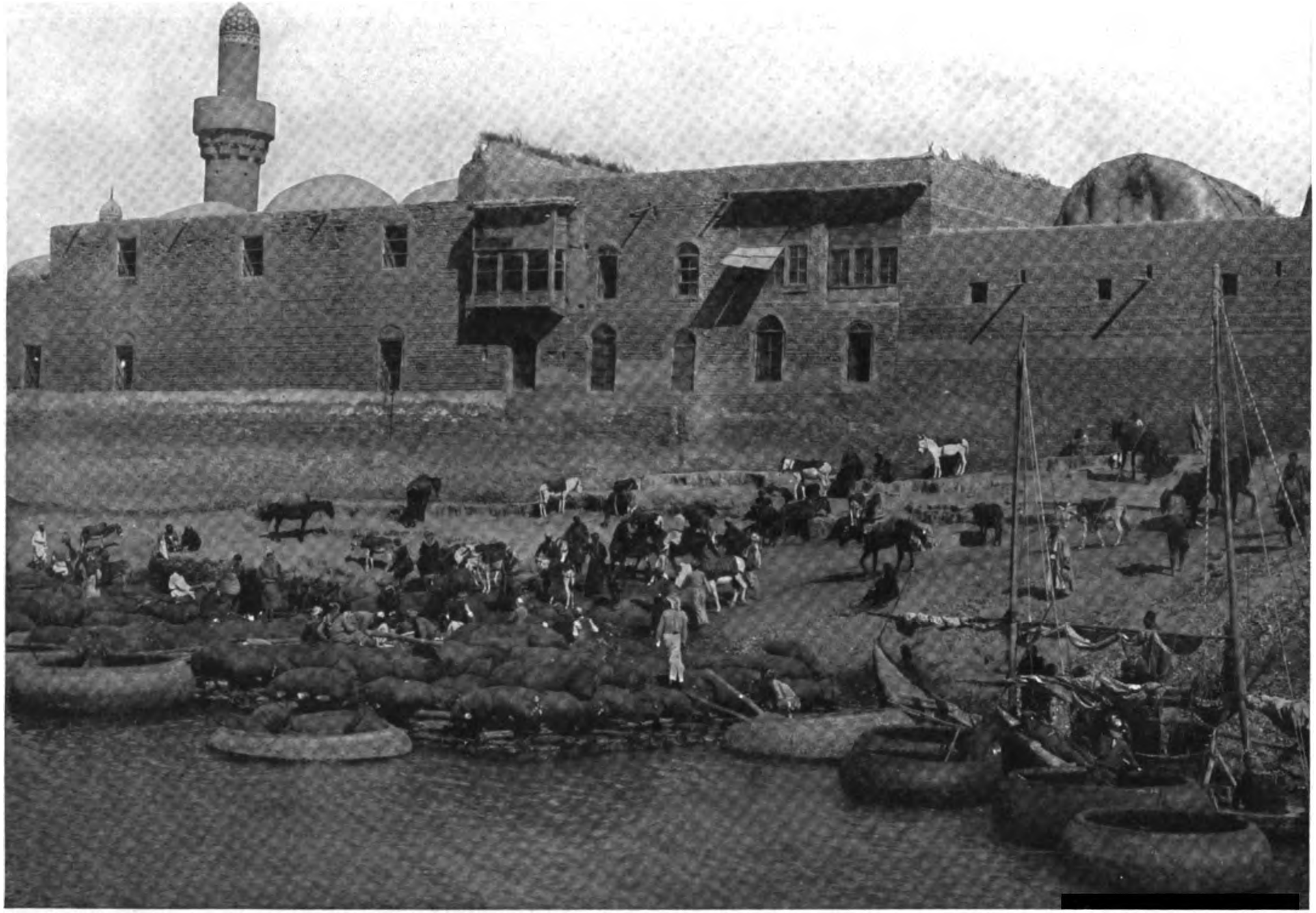


Photo by Frederick Simpich

THE WATER FRONT AT BAGDAD, SHOWING "KELEKS" AND "GOOFAHS" (SEE PAGES 548 AND 549)

The present custom-house at Bagdad is a wing of the old palace of Harun-al-Rashid; yards of scrawling Arabic characters, cut in marble panels, still adorn its historic walls. Crowding through a maze of baled goods, derricks, naked Arabs, pack-mules, camels, and strange smells, the new-comer emerges from the custom-house only to hunt in vain for the "main street that leads uptown."

Bagdad arteries of traffic are mere alleys, often so narrow that two donkeys cannot pass. Once I saw Turkish soldiers try to move artillery through Bagdad. The streets were so narrow the horses had to be unhitched, and men moved the guns about by hand.

A great wall encircles Bagdad, with guarded gateways, as in medieval days. Flat-roofed, huddled Moorish houses, many almost windowless and each surrounding its own open court, are a distinct feature of the older parts of Bagdad. On these flat roofs Arabs spend the summer nights with tom-toms, flutes, water-pipes, and dancing women. Facing the river, removed from the Arab town, are built the imposing foreign consulates, mercantile offices, and the sumptuous homes of rich Jews, Armenians, Greeks, and Syrians—the men who have made New Bagdad.

ALI BABA'S AGE IS PASSED

But the Bagdad of Ali Baba's day, with the splendor of Aladdin's enchanted age, is gone forever. The palaces, the mosques, and minarets are mostly in ruins. Even the tomb of lovely lady Zobeida, favorite wife of Harun-al-Rashid, is tumbled down and decayed. It is into modern monuments to New Bagdad—into roads, bridges, public buildings, irrigation works, army organization, dredging the Tigris, etc.—that the Young Turks are putting their money.

With Bagdad's tumultuous past, since its founding by El Mansur in 731, the modern Bagdaddis are not concerned. Every one knows, of course, that Bagdad was for centuries the capital of the whole Mohammedan world, visited annually by shahs, nawabs, and Indian princes; that it was a maelstrom of vice, so weakened by its own excesses that when Halagu, grandson of Jenghiz Khan, swooped down upon its carousing nobles they fell stupid victims to his Tatar ax.

Modern Bagdad is in safer hands; no dissipated royalty guards its gates. Sober, clear-headed men, drilled in the best schools of modern Europe, able to hold their own anywhere, administer the affairs of this important Turkish province of Bagdad. As late as 1830 the Tigris overflowed its banks, swept through Bagdad, and drowned 15,000 people in one night. This could not happen now; a great levee, built by skilled Turkish engineers, surrounds the town.

If the "Forty Thieves" started operations in Bagdad nowadays they would go to jail; Sinbad himself would be asked to "tell it to the Danes." Dashing Zobeida, with her fast social set, would sigh in vain for the gay life of old. Modern Bagdad has no time for scandal and duels; it has found its work.

BAGDAD A WATCH-TOWER FOR THE POWERS

In the awakening of the Middle East Bagdad has assumed a position of considerable importance. Here England, Russia, and Germany established their diplomatic sentinels, as at Teheran; and from Bagdad they looked on at short range, following each other's every move in the great game of Middle Eastern politics. Bagdad has become a sort of watch-tower for the Powers on the outskirts of civilization. Here the agents of land-hungry nations watched the throes of the awakening East, waiting for the imminent shifting of a map that has remained unchanged for centuries.

So Bagdad today is important, not because of its romantic past or because Sinbad lived here, but because it has become the busy center of a great field of action—the theater of international war for political and commercial supremacy in the Middle East.

From the northwest, by way of El Helif and Mosul, is approaching the famous "German Bagdad Railway," destined to link India with Europe and bring Bagdad close to Paris.

Ordinarily Bagdad's streets are as safe at night as those of New York or London. The Sixth Turkish Army Corps,

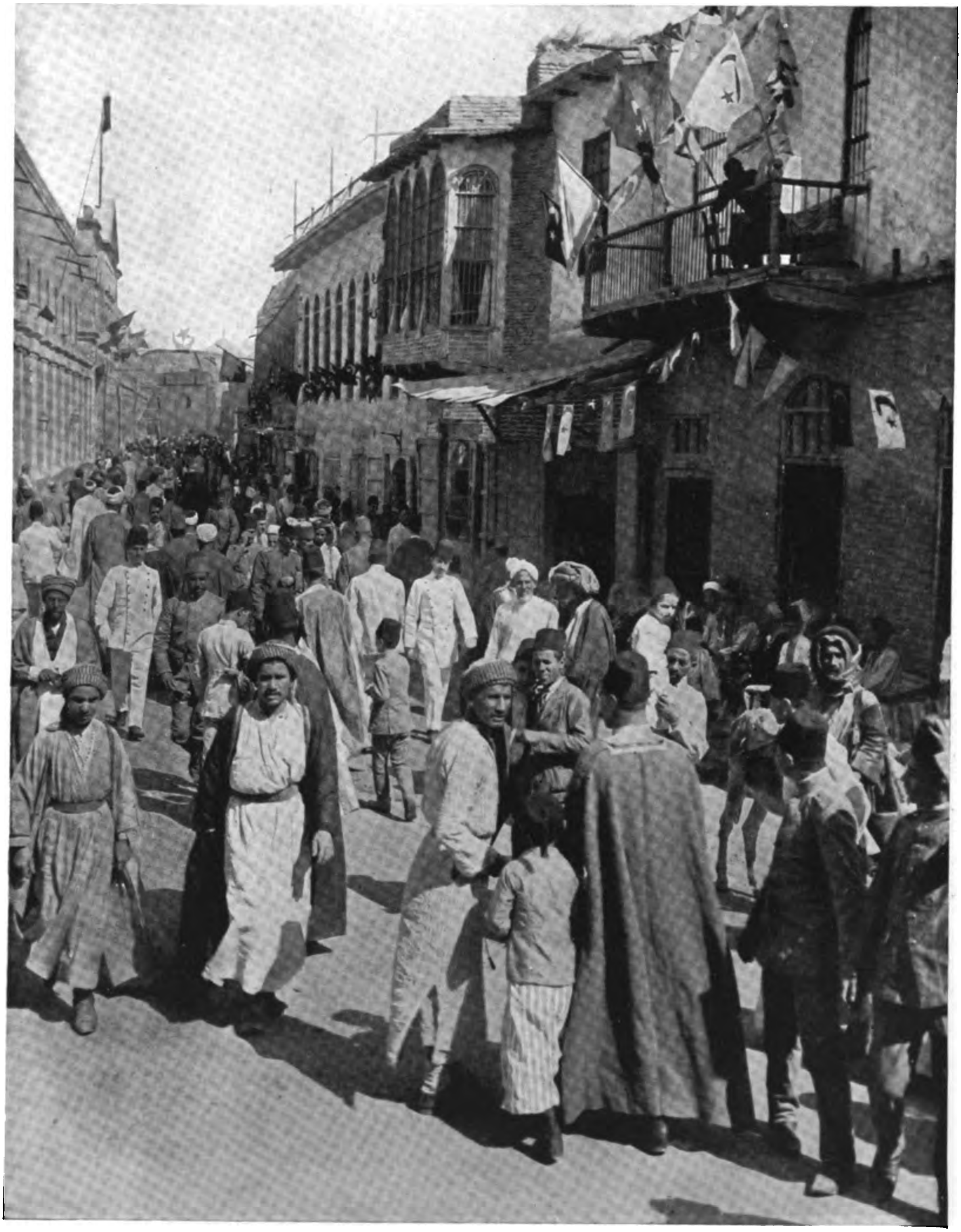


Photo and copyright by Underwood & Underwood

THE PRINCIPAL STREET OF BAGDAD, WHERE THE JEWS AND MOSLEMS THRONG

"If the 'Forty Thieves' started operations in Bagdad nowadays they would go to jail; Sinbad himself would be asked to 'tell it to the Danes.' Dashing Zobeida, with her fast social set, would sigh in vain for the gay life of old. Modern Bagdad has no time for scandal and duels; it has found its work" (see text, page 552).

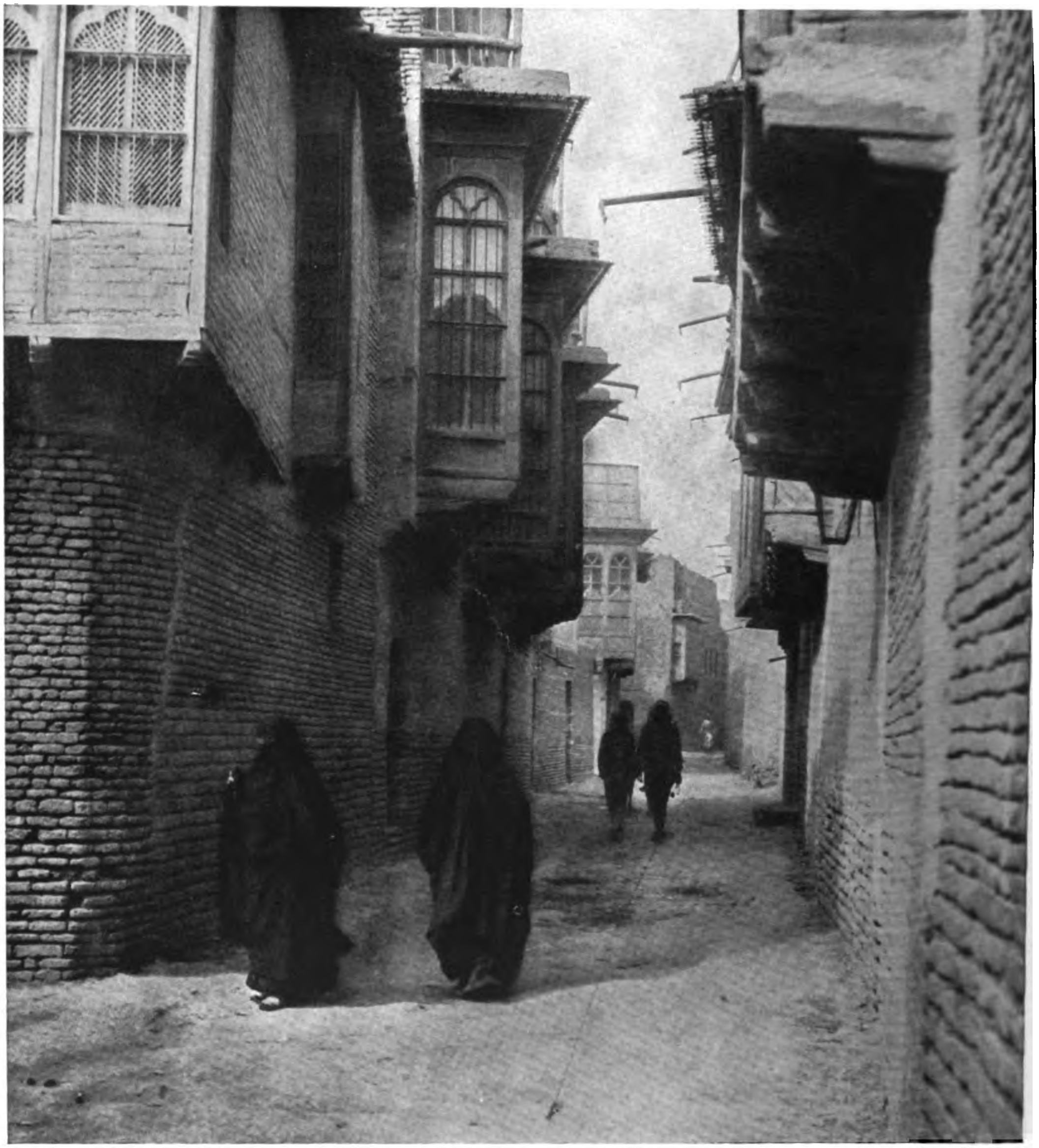


Photo and copyright by Underwood & Underwood

TYPICAL STREET AND MOHAMMEDAN HOMES AT BAGDAD

"Think what a sensation would ensue in any American sitting-room if an Arab woman, her nails, lips, and eyelashes dyed, her limbs tattooed, rings in her nose, and anklets jangling, might suddenly appear—silk bloomers and all—in the midst of a crowd of Yankee women! Our own composure and self-restraint might not be any greater than that showed by these Arab women at Bagdad when I, an American girl in street clothes, appeared among them. They crowded about, feeling my hands and face, getting down on their knees to admire my high-heel shoes, stroking the skirt of my blue tailored suit, behaving like excited children with a new toy. My hat-pins were a source of great wonder, and my tight-fitting coat brought forth many a fervent 'All-a-a-h!'" (see text).

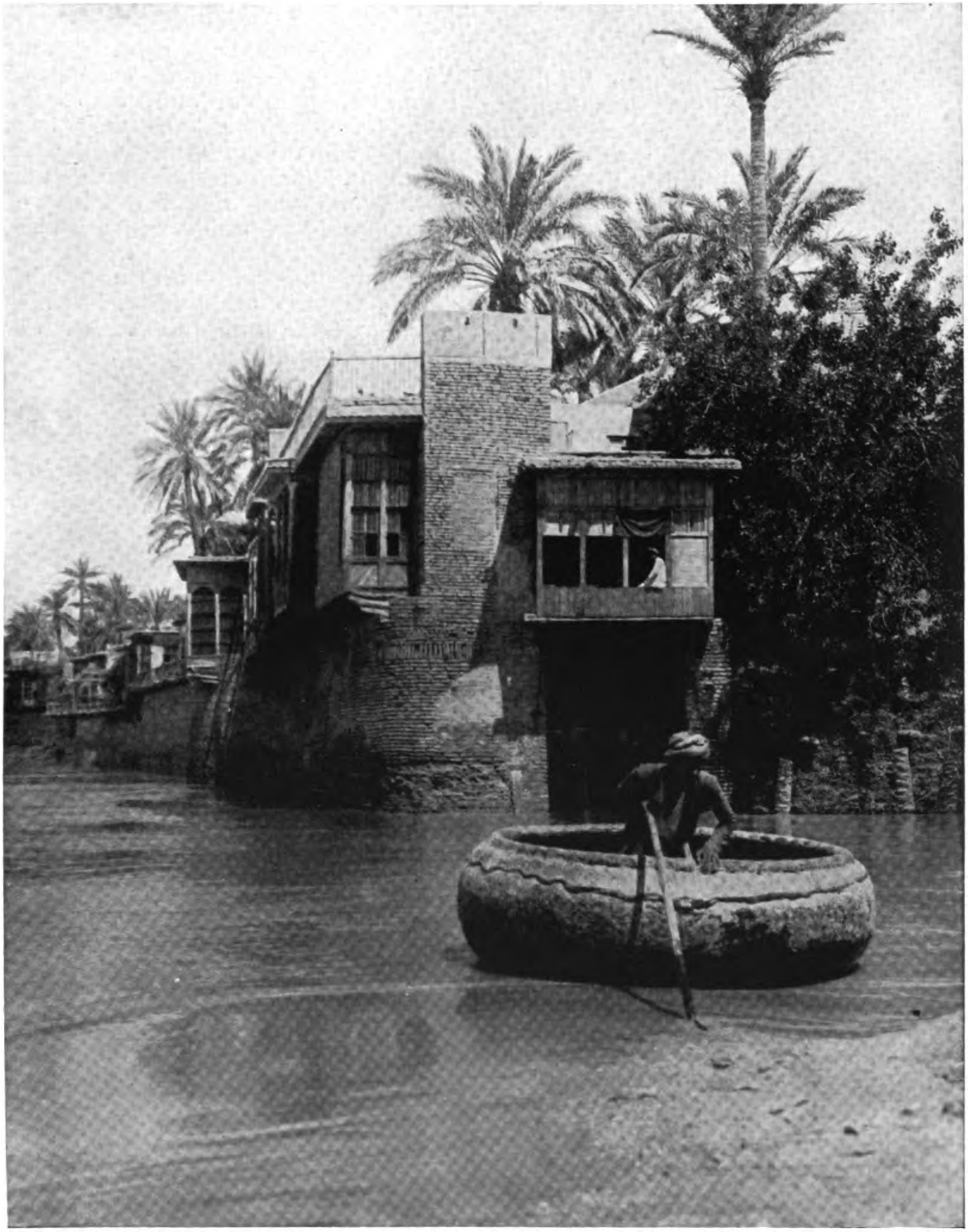


Photo and copyright by Underwood & Underwood

PICTURESQUE HOMES OF WEALTHY JEWS ALONG THE TIGRIS, IN NORTH BAGDAD

25,000 strong, is stationed at Bagdad and is an effective force. In the picturesque old Serai, or Government House, the Vali (Governor-General) holds his court, surrounded by aides in gold braid and fezzes. Every one, civil or military, in the Turkish government service must wear the fez.

On the flat plain outside Bagdad dapper Turkish officers, drilled in German military schools, are training the raw Arab recruits, teaching them to shoot and to do the German "goose step." The rattle of the machine gun—like riveting machines on a steel skyscraper—is a familiar sound on the plain outside the city gates.

THE PEOPLE, TOO, ARE CHANGED

Pilgrims still flock to the ancient shrines of Sheik Abd-ul-Kadir and Abu Hauefah, the Shia Imams, and hordes pour through from Persia en route to Holy Nedjef; but the sort of men whose quick wits and ready swords lent luster to the stirring tales in the Arabian Nights have departed. In their shoes stand shrewd Jews and Armenians, who ship wool, dates, and rugs to America and import "piece goods" at the rate of $5,000,000 a year from Manchester. To ride a galloping camel one mile would break every bone in their soft bodies, and the mere sight of an old-time Bagdad blade would give them congestive chills.

The hard-riding, fierce-fighting fellows of old are gone forever. Grim barter has supplanted the gay life. As has been said, "Trade is greater than tradition, and foreign consuls above the name of Caliph."

At nightfall the narrow streets of Bagdad are still noisy with the dull rattle of tom-toms and the shrill notes of the Arab flute. Painted ladies in ear-rings, anklets, and baggy trousers sing and dance on the flat roofs; but the ear-rings and anklets are imported from Austria; the lady herself came from Port Said, and her dance is better staged in half the cities of America by women who have never seen the East—the home of "le danse du ventre." Her "act" would not be well received in any other place than Bagdad.

Along the Tigris are many coffee shops, where brokers sit at night smoking bubbling "narghiles" and talking trade. Even their red fezzes came from Germany. Oil in their lamps came from the Yankee octopus—in British bottoms, of course. Only their red, turned-up shoes, their bright keffeyas, and their long, flowing abbas were made in Bagdad. Squads of Armenian and Chaldean youths stroll by, with here and there a bevy of girls, all clad in semi-European clothes, significant of a changing East.

Till lately Bagdad, more than any other city in the Ottoman Empire, has been slow to yield to Europe's influence. For centuries Bagdad kept close to the Bedouin life, under the sway of nomad customs. Even now Bagdad's famous bazaars, despite her evolution in other ways, are conducted as they were a thousand years ago. These Arab trading places have changed not one whit since Abraham's time. Here is barter and sale as Marco Polo found it, as it was in the days of the Three Wise Men who bought gifts for Bethlehem.

BAGDAD'S BUSY BAZAARS

Here is such a mob as Christ drove from the temple—a vortex of usury. For a thousand years brown men in turbans have bought, bartered and sold, wheedled and cheated in this magic old mart. From Tokyo to Teheran there is no such place where Europe's hand seems absolutely stayed. If Herodotus came back he could see no changes since his day.

The shopping streets seem like tunnels; they are arched overhead with brick to keep out the heat; thus they run, like subways, up and down the bazaar quarter. Through these long, stifling, faintly lighted tunnels throngs the eternal crowd of men, mules, and camels. On each side are stalls no larger than telephone booths. Cross-legged in each booth, his wares piled high about him, sits the Arab or Jew trader. Brown women, their faces hid by yashmaks, upset the ordered piles of goods and haggle shrilly. Here, as in Peking's famous "Pipe street," men selling similar wares are grouped together.

What would New York say if all the cigar stands were in Brooklyn, the boot-

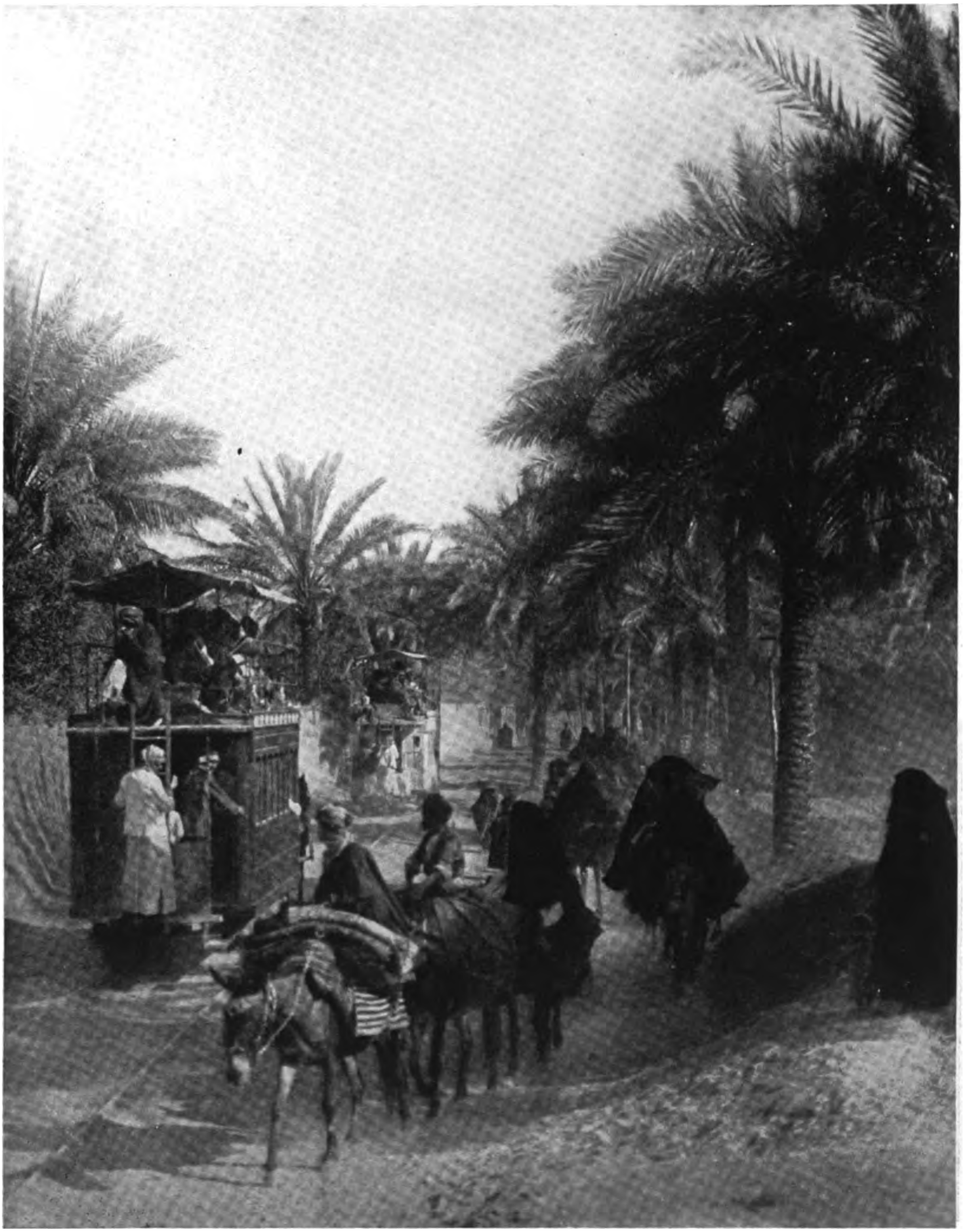


Photo and copyright by Underwood & Underwood

PECULIAR DOUBLE-DECKED HORSE-CARS ON A SUBURBAN STREET: BAGDAD, MESOPOTAMIA

"In May sandstorms from the Arab desert strike Bagdad, choking the people with fine, hot dust, obscuring the whole city in a thick, stifling gray cloud. You can see this dust cloud approach from the southwest—a wide, long, lead-covered wave of awful aspect. A fierce wind, its breath like an oven blast, threshes the tall palms and roars through the narrow, mud-walled streets. The thermometer climbs to a sizzling height" (see text, p. 562).

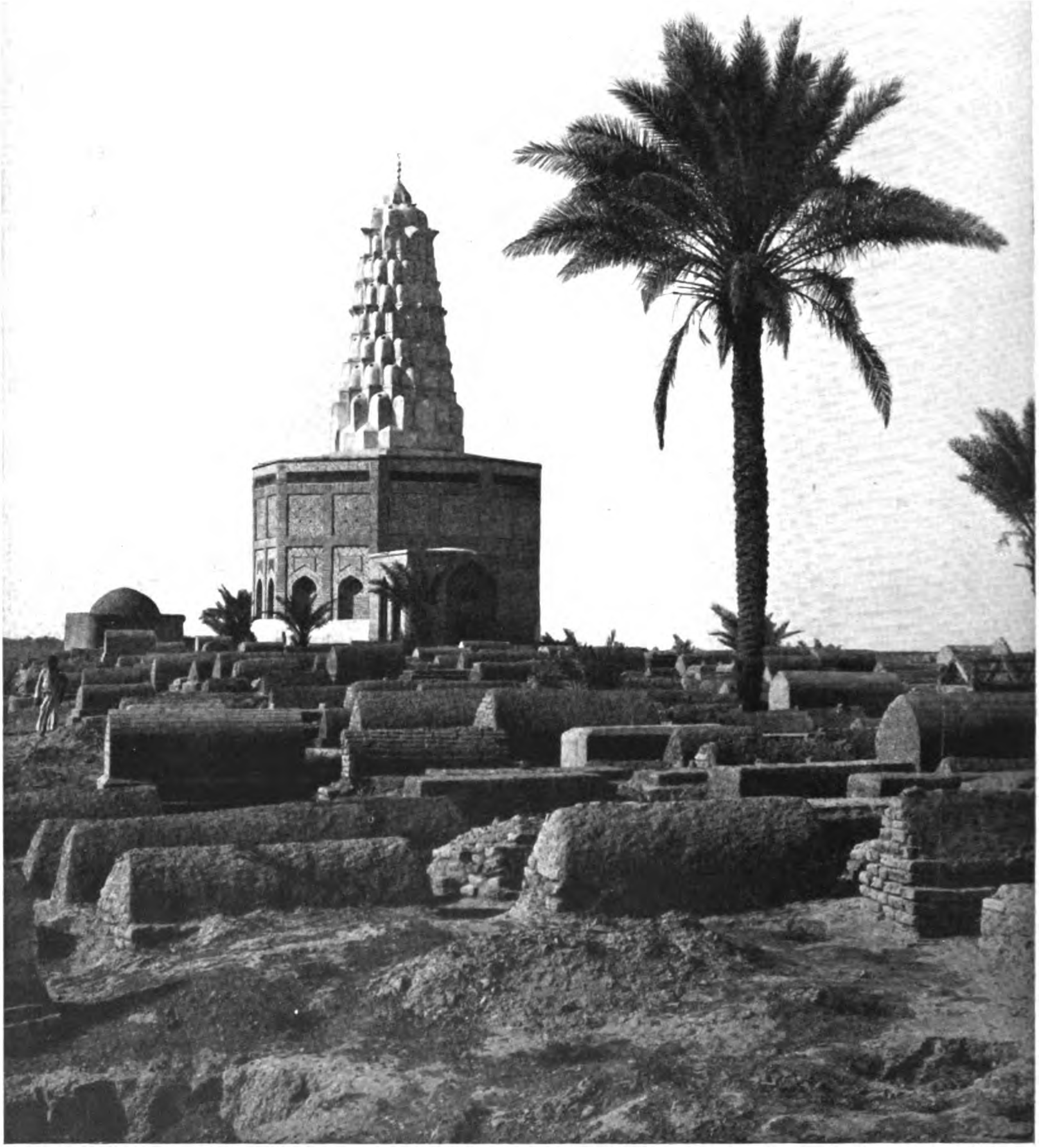


Photo by Frederick Simpich

THE TOMB OF ZOBEIDA, THE FAVORITE WIFE OF HARUN-AL-RASHID, NEAR BAGDAD: ARAB WOMEN VENERATE THE MEMORY OF ZOBEIDA

"From the first day at Bagdad I felt the subtle charm of the East—that mystic spell that seizes on the souls of those who trespass on its ancient places—and here every law of the life we know seems changed. Between us—women of the West—and these daughters of the desert is a gulf, impassable and not of our own making; it is a barrier of religion—a religion that allows one man to have four wives at once" (see text, page 567).

blacks in the Bronx, and the lunch-counters in Newark?

Up from a myriad of throats comes conversation in Arabic, Armenian, Turkish, Kurdish, and Persian; in Greek, Hindustani, and French. "Barlack!" your guide yells to loafers in your path—"Get out of the way!" "Barlack, Effendi!" if the loiterer is more than mere clay.

ARABIAN HUMOR

The peddlers have a sense of humor; the flower vender shouts, "Salih Hamatak!" literally, "Appease your mother-in-law." The roast-pea man sings out, "Umm Ennarein!" or "Mother of Two Fires," meaning the peas are twice roasted. Slow-moving camels do not "keep close to the curb," as police regulations would require of them elsewhere. Here are no traffic rules; the rudest and strongest only move with freedom. They and the vagabond dogs, thousands of whom sleep in the filth underfoot, are undisturbed.

MAKING RARE OLD RUGS

Often you may see a fine rug lying flat in the filth of the narrow street, ground beneath the tramp of men and beasts; but there is method in this. Foreigners make Oriental rugs, bright and new, in Persia, and sell them through Bagdad. Since an "old" rug is worth more, wily brokers have hit on this shameful way to make a new rug look old; the latest art effort thus soon becomes a "rare old rug," so far as the eventual owner in America knows.

In short side streets are theaters, gaudy places where night is turned to day and much coffee is consumed. Here fakirs eat swords, pull live toads from soiled turbans, and roll chickens into snakes.

And everywhere, elbowing the throng, are the neat, brightly uniformed officers of the Young Turk army, come in from the foreign quarter to see the old bazaar. The ragged, slouching zaptiehs of Abdul Hamid's day are gone from view.

Giant Kurds, called "hamals," do the carrying. I saw one Kurd carry 700 pounds on his back, a belt passed over the load and beneath his bent head to balance the weight. A hamal in summer lives almost wholly on "khiyar" (raw cucumbers), eating over three pounds daily (see page 533).

The bazaar folk eat strange things. Strips of fat from the fat-tail sheep are much eaten; then there is goat sausage, manna, gourds, pomegranates, citrons, skins of dried dates and figs, mutton, beef — everything but pork. No one starves; beggars are few. Much grain comes down from up the Tigris on keleks (see page 548).

COPPERSMITHS AND SHOEMAKERS

Old-time arts flourish here, too. Coppersmiths, naked to the waist, hammer furiously in the subdued glow of their forges, making vases, urns, and kettles of quaint beauty. Some of the trays they make are five feet across. Bedouins fancy these; they say huge vessels indicate huge generosity. Here is much fine camel gear, too, and mule bridles decorated with colored shells, and pistol holsters all silk-embroidered.

In one shop I saw over 400 shoemakers, every man turning out exactly the same kind of a shoe—the eternal red ones with curved toes. Much ancient armor, weapons, Babylonian coins, and other alleged antiquities are offered for sale. Most of this junk is made "fresh every hour" in Birmingham, especially for the Bagdad trade. Worldly-wise Jews, realizing that *rare things* cannot be had in abundance, are meeting the curio demand in a business way.

An old law says the arched roof of the bazaar must be high enough so a man on a camel, carrying a lance, can ride under without bumping. Most Bedouin visitors, however, leave their camels outside the city gates. One identifies these desert folk at a glance. Their long sunburned hair, faded garments, stout camel sticks, and wild, furtive looks easily mark them as from the waste places. You see them, too, holding one corner of a soiled garment to their noses; the fetid air of the bazaar, after the desert purity, is unbearable. Thousands of the bazaar folk die every year from tuberculosis.

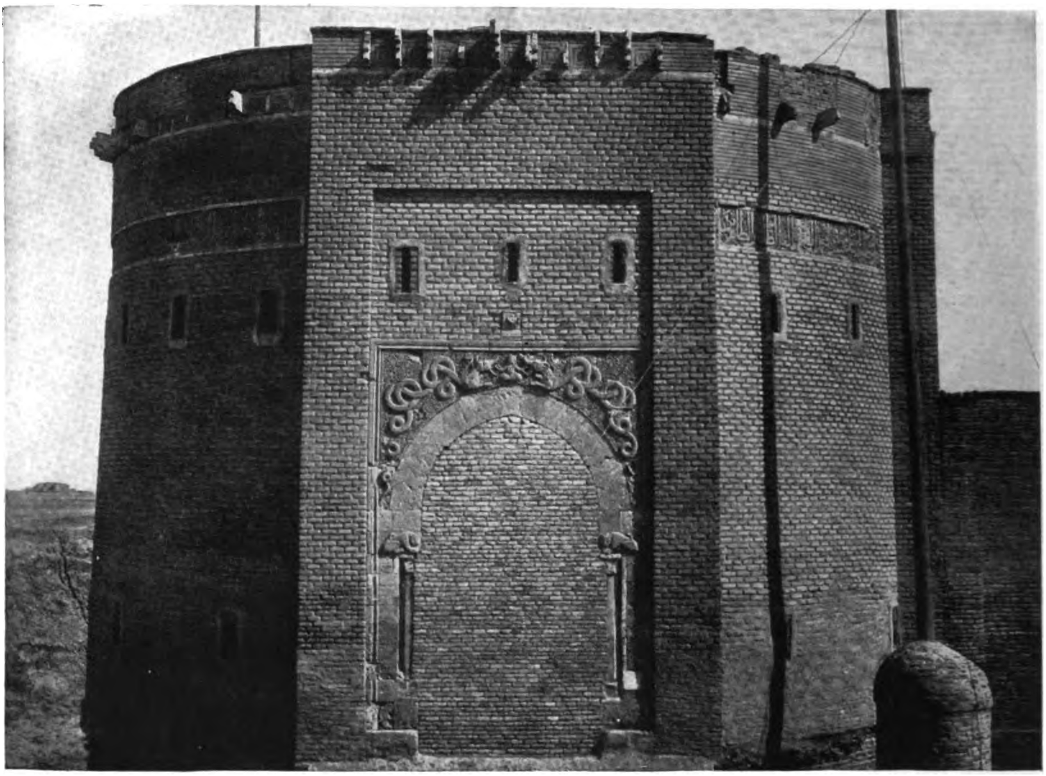


Photo by Frederick Simpich

ONE OF BAGDAD'S ANCIENT GATES

After the fall of the caliph who built it, this gate was walled up and has never been used since. "A great wall encircles Bagdad, with guarded gateways, as in medieval days. Flat-roofed, huddled Moorish houses, many almost windowless and each surrounding its own open court, are a distinct feature of the older parts of Bagdad. On these flat roofs Arabs spend the summer nights with tom-toms, flutes, water-pipes, and dancing women" (see text, page 552).

During the Ramazan feast the bazaar is open all night. For a month Moslems fast all day, eating only at night, when the great signal guns at the Serai boom out that it is sunset. Bagdad's bazaar on Ramazan nights is a picturesque, noisy, riotous place, where it is not difficult to find trouble.

RESTORING THE GARDEN OF EDEN

Fifty miles west of Bagdad, along the Euphrates, lies the region now commonly regarded as the Garden of Eden. To irrigate this Eden and to reclaim millions of fertile acres around Bagdad is the stupendous task to which the Turkish government has addressed itself.

At Mussayeb, on the Euphrates, I saw 4,000 Arabs digging like moles in the Babylonian plain, making a new channel for the river. In the dry bed of this artificial channel an enormous dam is being built. Steel and machinery from America are in use. When all is ready, the Euphrates will be diverted from its old bed and turned into this new channel, the dam raising the water to the level required for irrigation.

Nebuchadnezzar's vast irrigation system, which once watered all Babylonia, can still be easily traced for miles about Bagdad. One giant canal, the Narawan, runs parallel with the Tigris for nearly 300 miles; it is 350 feet wide, and all about it the take-offs and laterals may still be identified. Herodotus says he found a "forest of verdure from end to end" when he visited Mesopotamia.

THE OLD ORDER PASSING

Already the river Arabs are taking to irrigation by modern methods; the na-

Photo by Frederick Simpich

AN OPEN PLAZA IN BAGDAD'S BUSY BAZAAR

tive "cherrid," consisting of a goatskin drawn over a pulley for lifting water from the river, is disappearing; so is the Euphrates water-wheel. Oil engines and pumps are fast coming into use; more than 300 outfits were sold to Arab farmers about Bagdad in 1909-1910.

It is estimated that the work of putting this vast area into shape for modern irrigation farming will call for a total outlay of $130,000,000. The total area that could be successfully irrigated aggregates 12,500,000 acres; but the project under immediate contemplation embraces only 3,500,000 acres. The cost per acre, therefore, on the work planned would be slightly more than $37 per acre. It is estimated that the land could be leased at a figure that would bring in a 9 per cent return on the investment. Preliminary contracts were let in 1912, but the outbreak of the war has resulted in the suspension of the work for the time being, at least.

South of Bagdad, in the Karun River region, oil wells have been sunk, pipe-lines laid, and refineries built. Twenty thousand tons of pipe came from America under one order. American well-drillers are employed. Coal at Bagdad costs from $15 to $20 per ton; now fuel oil will be used. Bitumen or asphalt lakes and springs abound along the northern reaches of the Tigris and will contribute to the prosperity of Bagdad as developed.

SIDE LIGHTS ON BAGDAD'S DAILY LIFE

About fifty foreigners—British, German, Russian, Italian, and French—lived in Bagdad before the war. Because of their isolation and unusual surroundings, a word about their daily life makes a good story. Twelve of these foreigners are consuls or consular agents; the rest are engaged mostly in trade. Arabs do not readily pick up a foreigner's name, but identify him usually by his work. The licorice buyer, for example, is known far and wide as Abu Sus, "Father of the Licorice." There was also the "Father of the Rugs," the "Father of the Steamers," and the dentist was called the "Father of the Teeth."

Beneath every dwelling-house is its "serdab"—a deep, cellar-like chamber,

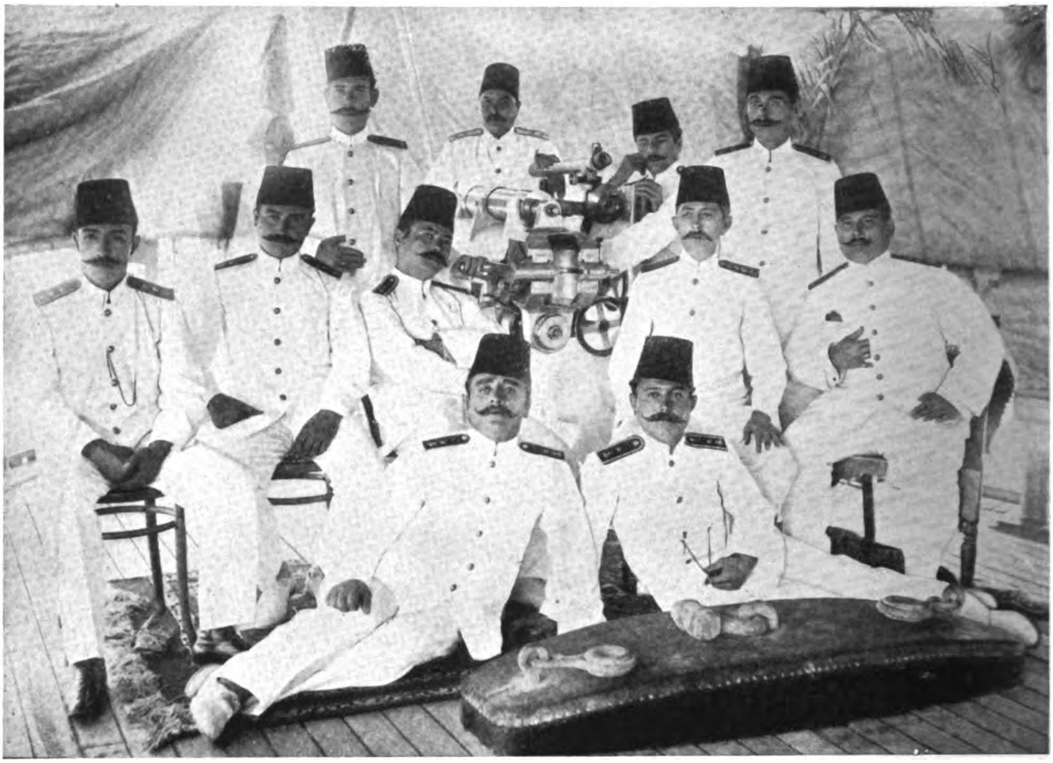


Photo by Frederick Simpich

OFFICERS OF THE YOUNG TURKS' NAVY, STATIONED AT BAGDAD, TIGRIS RIVER

"Modern Bagdad is in safer hands; no dissipated royalty guards its gates. Sober, clear-headed men, drilled in the best schools of modern Europe, able to hold their own anywhere, administer the affairs of this important Turkish province of Bagdad" (see text, page 552).

with mats of camel's-thorn darkening its few small windows. Onto these mats water is constantly thrown during midday to cool the air. Water to drink is cooled in earthen jugs called "tongua." Meat must be eaten a few hours after killing.

The climate is like that of Egypt or Lower California—hot, dry summers and beautiful winters.

In May sand-storms from the Arab desert strike Bagdad, choking the people with fine, hot dust, obscuring the whole city in a thick, stifling gray cloud. You can see this dust cloud approach from the southwest—a wide, long, lead-covered wave of awful aspect. A fierce wind, its breath like an oven blast, threshes the tall palms and roars through the narrow, mud-walled streets. The thermometer climbs to a sizzling height. A native told me of one such storm that struck Bagdad twenty years ago, when the air grew so hot that even after the storm was passed the suffering folk were forced to pour water on their straw mats to cool them off enough to lie on. Scorpions frisk freely about many of these Bagdad serdabs, but their sting is not fatal.

THE DATE BOIL

An uncanny, pernicious pest called the "date boil" scars the face of every human born in Bagdad. Children invariably have this dreadful sore on their faces. Throughout the Middle East this mysterious scourge is known by various names—"Buton d'Alep," "Nile sore," "Delhi button," etc. Its cause and its cure are unknown. First a faint red spot appears, growing larger and running a course often 18 months long.

White men from foreign lands have lived years in Arabia, only to have this boil appear upon their return to civiliza-

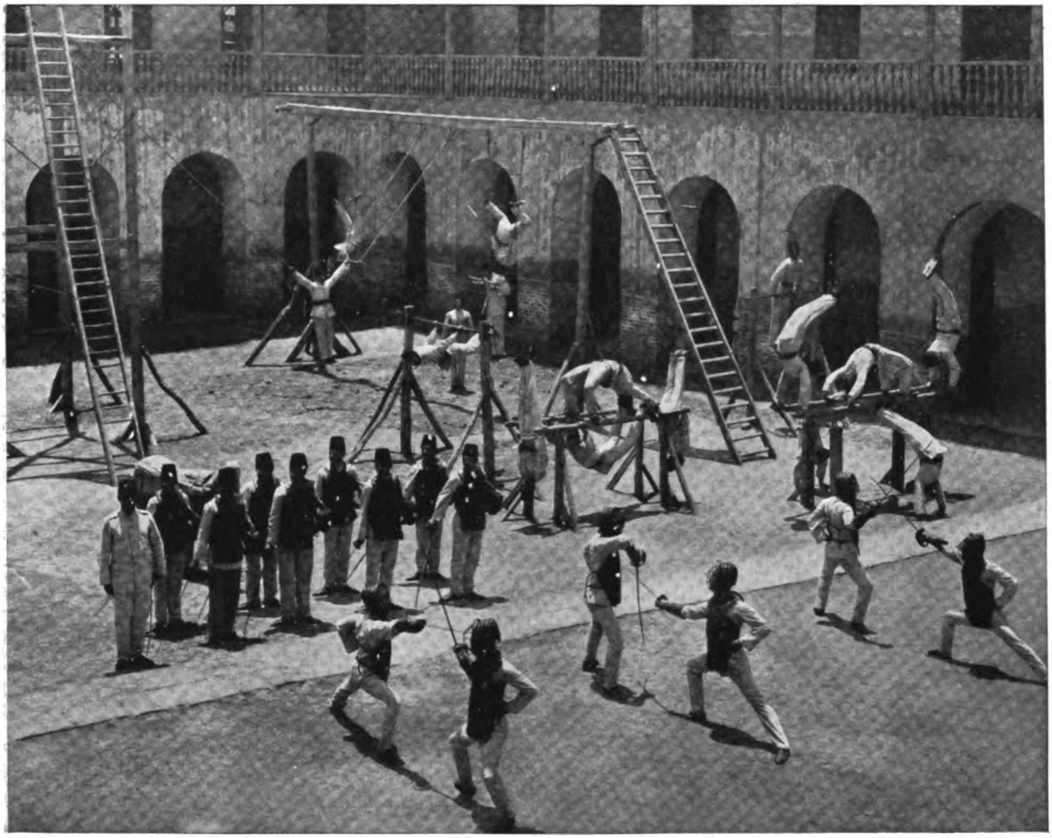


Photo by Frederick Simpich

ARAB RECRUITS BEING DRILLED IN TURKISH MILITARY SCHOOL AT BAGDAD

tion, where its presence is embarrassing and hard to explain. Maybe it was "date boils" that Job had! Once a British consul at Aleppo lost almost his whole nose from one of these boils. Nearly every Bagdad native you meet has this "date mark" on his face.

THE TOWER OF BABEL WAS "LOCATED" HERE

Since 1888, when the University of Pennsylvania sent its archeological expedition to Bagdad to explore buried cities on the Chaldean plain, few Americans have passed this way. The Arabs about ancient Nippur, where the American expedition excavated, remember the men of that party very well, however. While I was in Bagdad a grizzled old desert guide came and asked after the health of the men who left Bagdad for Philadelphia more than 20 years ago! The American medical missionaries at Busra are well known among all the tribes in lower Mesopotamia, of course.

But Americans in Bagdad are as yet an unknown quantity. For a year I lived there, the sole specimen of my kind. Yet the 180,000 inhabitants show a striking variety, almost justifying the tradition which locates the "Tower of Babel" near Bagdad (page 566). Certainly the mixed races living in Bagdad produce even now a striking "confusion of tongues":

Sunni Moslems	120,000
Shia Moslems	15,000
Jews	40,000
Chaldeans	1,600
Syrians	1,200
Greeks	150
Hindus	75
Europeans	40

This mixture preserves a peace balance, undoubtedly, and saves Bagdad from the race wars and massacres common in Asia Minor, where Moslem meets Christian.

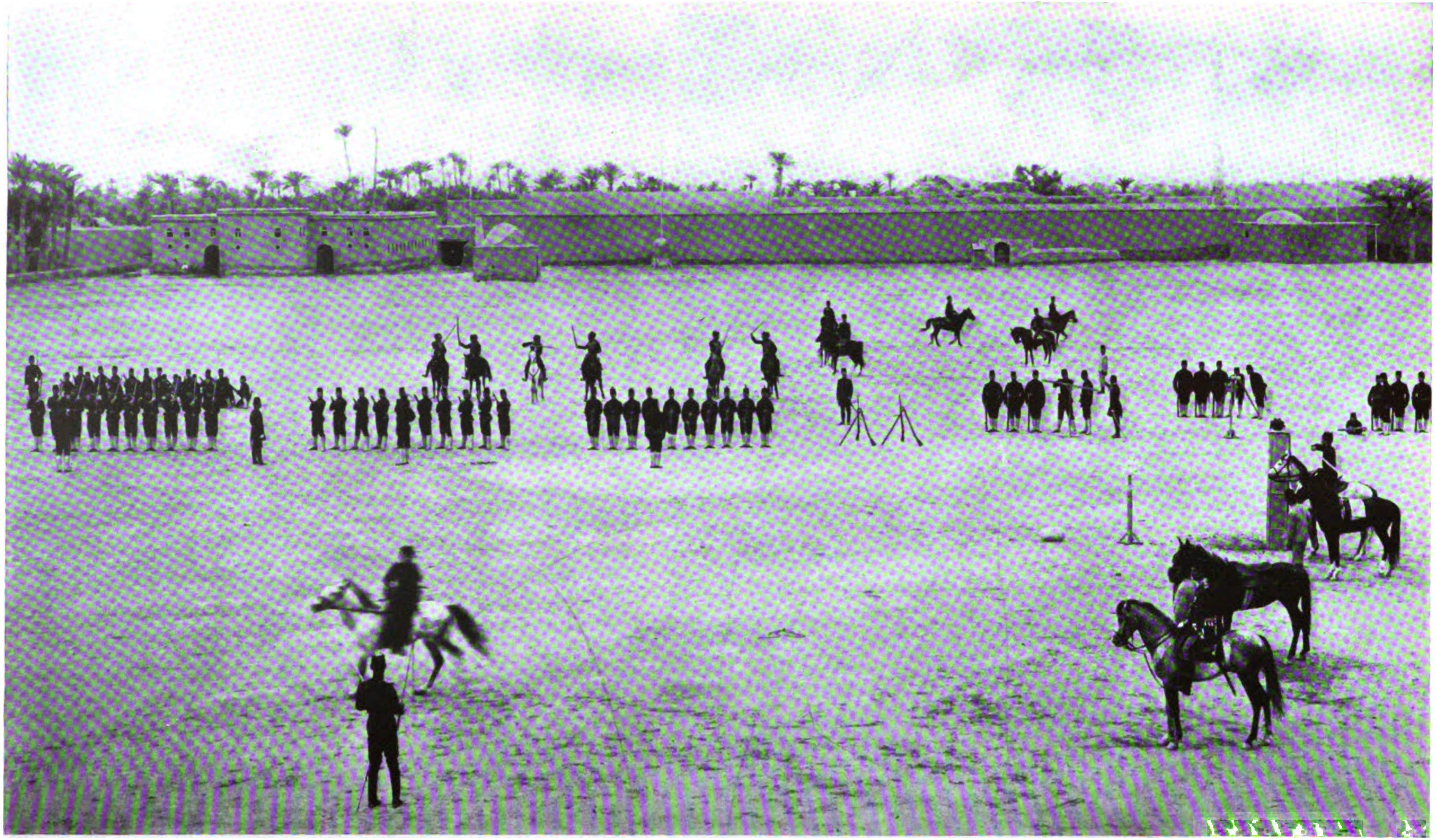


Photo by Frederick Simpich

VIEW OF TURKISH ARMY BARRACKS AT BAGDAD

"On the flat plain outside Bagdad dapper Turkish officers, drilled in German military schools, are training the raw Arab recruits, teaching them to shoot and to do the German 'goose step.' The rattle of the machine gun—like riveting machines on a steel skyscraper—is a familiar sound on the plain outside the city gates" (see text, page 556).

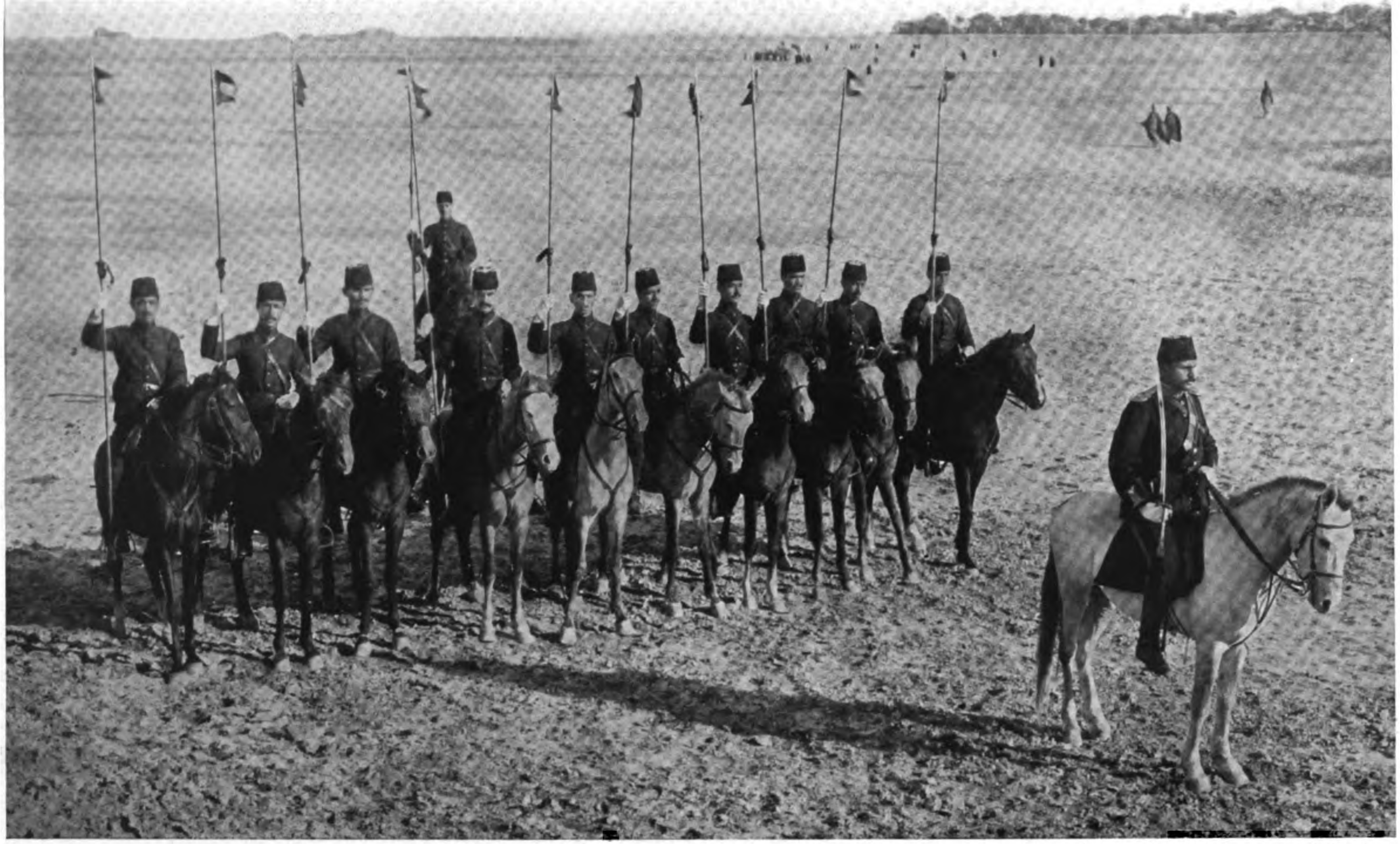


Photo by Frederick Simpich

A CRACK CAVALRY SQUAD AT BAGDAD

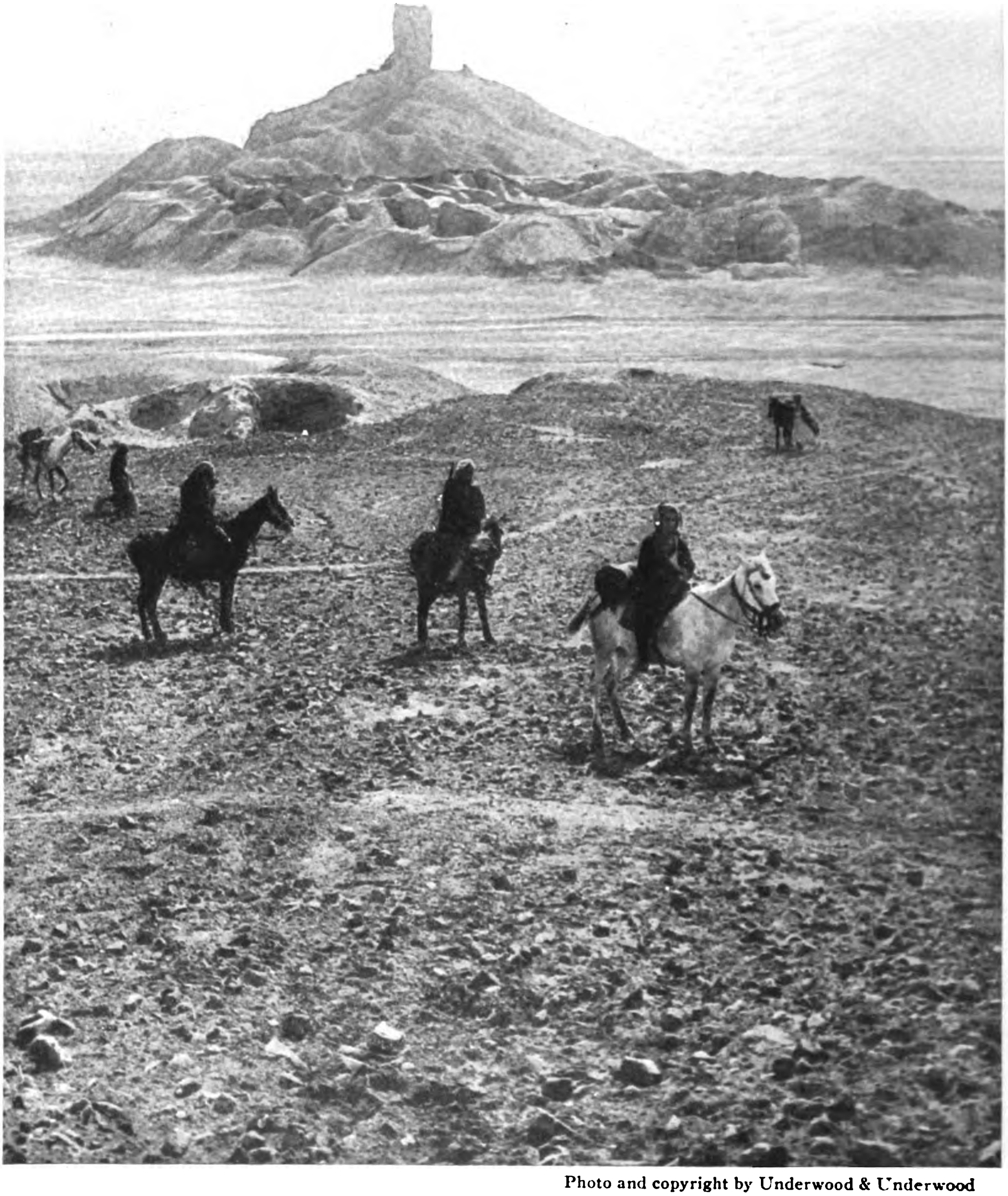


Photo and copyright by Underwood & Underwood

THE TRADITIONAL TOWER OF BABEL: IMPOSING RUINS AT BARSIFFA, NEAR BAGDAD

"Nebuchadnezzar's vast irrigation system, which once watered all Babylonia, can still be easily traced for miles about Bagdad. One giant canal, the Narawan, runs parallel with the Tigris for nearly 300 miles; it is 350 feet wide, and all about it the take-offs and laterals may still be identified. Herodotus says he found a 'forest of verdure from end to end' when he visited Mesopotamia" (see text, page 560).

BAGDAD'S RELIGIOUS INTERESTS

In Bagdad there are 67 mosques, 27 synagogues, and 7 "native Christian" (Catholic) churches. There is no Protestant church. Sometimes on Sundays the British "resident" reads a service for foreigners, while outside his open window the sepoys are praying aloud in a mosque built for them by the British government. The English do not tamper with the creeds of their conquered blacks.

HOW THE ARAB WOMEN LIVE

Time seemed to turn back 20 centuries when I stepped off the Tigris River steamer at Bagdad. Old Testament men in turbans, sandals, and quaint flowing robes ("abbas") crowded about, calling each other "Yusuf" and "Musa"—Joseph and Moses. From the river's edge veiled women walked away, gracefully upright, carrying on their shoulders tall jars of water—the same style of jars, no doubt, that held the water when it turned to wine.

Sheep are slain to seal a vow, and the blood covenant is common.

With their own shapely hands, Arab women still wash the feet of honored guests; upon their own heads they heap handfuls of dust when they mourn for their dead children; and should a Bedouin woman sin her brother may cut her throat, and the tribe will applaud his awful act of righteous wrath.

Arab women live, love, slave, and die knowing little of their Christian sisters in the Western world.

Few Arab women I met had ever even heard of America. One or two, whose husbands sold wool and dates to Bagdad traders, knew there was such a place as "Amerique," but they believed it merely a part of that far-away land called London, from whence came their bright calico and the cheap guns used by the sheiks in tribal wars. Even the men can tell the women little of the world beyond the desert's rim.

For all the average Arab women knows of America, she might as well live on Mars. My serving-maid, "Nejibah" (the Star), asked me if I came to Bagdad from Amerique by railway train. Once on this ancient plain, however, lived wise women—the consorts of kings—whose names and fame have come down to us through the centuries.

WHERE QUEEN ESTHER LIVED

Standing in Nebuchadnezzar's ruined palace at Babylon, my mind went back to the days of Queen Esther, the heroine of the Book of Esther. Here, amid this sand-blown heap of fallen masonry, where the hand came on the wall, where lean jackals now wail above the bones of kings, Esther played her rôle in the adventures of Ahasuerus, Mordecai, and Haman. It was here, or maybe at Shushan, that Esther revealed the foul plot against the Jews, saved her uncle Mordecai, and secured King Ahasuerus' sentence of death on the wicked Haman; and as Haman's face was covered before they killed him, so to this day convict's faces are hidden in Mesopotamia when they are led out to die. And maybe because Esther saved the Jews in that day they still flourish here. Bagdad alone shelters 40,000.

And among the Bedouins on the Euphrates desert—the waste that once was Eden—I saw Arab girls drawing water from the wells, just as Rebekah was doing when Abraham's agent found her and took her as the wife of Isaac. The Bible says Rebekah drew water for Eliezer's camels while he rested. About all these desert wells crude mud troughs for watering the camels are still found.

And "lebben"—curdled camel's milk like the Arab woman Jael gave Sisera to drink before she slew him—is in common use among the Bedouins of Mesopotamia. Whenever I went out on a desert journey, passing by an encampment, tiny half-naked Arab girls would dart out from the brown goat-hair tents, bringing a brimming bowl of "lebben" for the wandering "Khartoum of the Ferengies"—woman of the foreigners.

From the first day at Bagdad I felt the subtle charm of the East—that mystic spell that seizes on the souls of those who trespass on its ancient places—and here every law of the life we know seems changed. Between us—women of the West—and these daughters of the desert is a gulf, impassable and not of

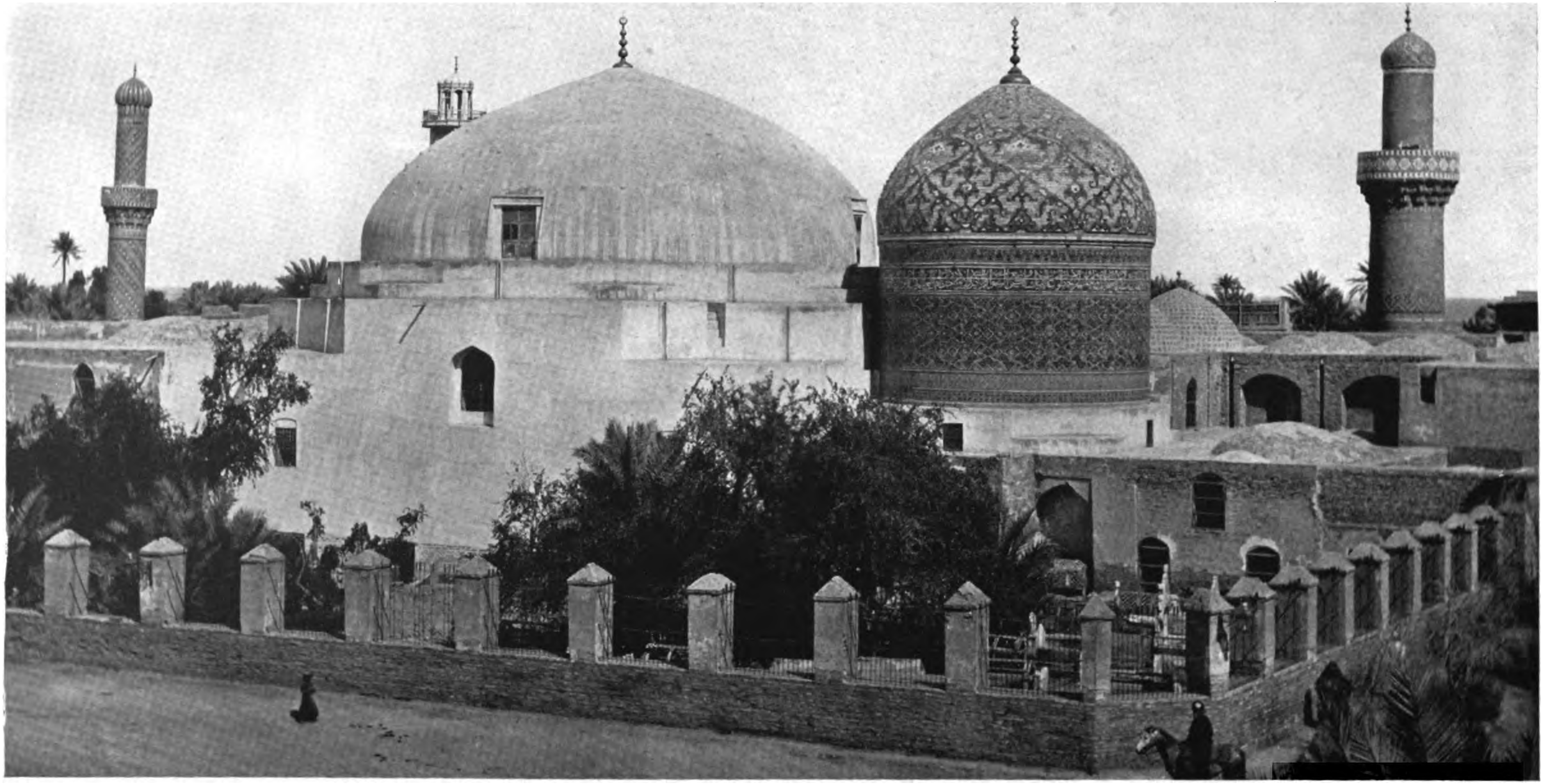


Photo by Frederick Simpich

THE MOSQUE OF SHEIK ABDUL KADIR AT BAGDAD

"In Bagdad there are 67 mosques, 27 synagogues, and 7 'native Christian' (Catholic) churches. There is no Protestant church. Sometimes on Sundays the British 'resident' reads a service for foreigners, while outside his open window the sepoys are praying aloud in a mosque built for them by the British government. The English do not tamper with the creeds of their conquered blacks" (see text, page 567).

our own making; it is a barrier of religion—a religion that allows one man to have four wives at once.

VISITING AN ARAB HAREM

In Bagdad I went to an Arab harem and visited with the "hareem," as the women are called. It was not an ordinary, ill-kept harem of a common trader or desert sheik that I saw. It was the ornate domestic establishment of a rich and influential person—a former government official and a man of prominence in the days of Abdul Hamid.

I went one Sunday morning in spring. The Pasha's imposing home—a Moorish house of high walls, few windows, and a flat roof with parapets—stands near the Bab-ul-Moazzam in Bagdad. Scores of tall date palms grace the garden about the "Kasr"—palace. In a compound beside the palace pure Arab horses stood hobbled, and a pack of desert hounds called slugeys, used for coursing gazelle, leaped up at my approach.

The dignified old Pasha himself escorted me through his domain. Clad in shining silk, turban, flowing abba, and red shoes with turned-up toes, he looked as if he might have just emerged from the dressing-room of some leading man in a modern musical comedy. His make-up was common enough for Bagdad, but to me he seemed positively "stagey"; but he was all affability, talking brightly in very fair French. He showed me a remarkable falcon—a hawk only three years old, with over 200 gazelles to its credit. In a cage near the palace door were two lean, gray lions, trapped in the jungle marshes along the Tigris. Finally we entered the corridor leading to the "bab-el-haremlik," or gate to the harem.

During all the talk about horses, dogs, and lions I had been consumed with curiosity to say something about the human harem pets of the old Pasha; but in Arab eyes it is a gross impertinence to ask after the women in a man's family. Like as not he would reply that the "wretched creatures are barely keeping alive." So I had to wait till the Pasha himself spoke of his harem and asked me to come and see its beauties.

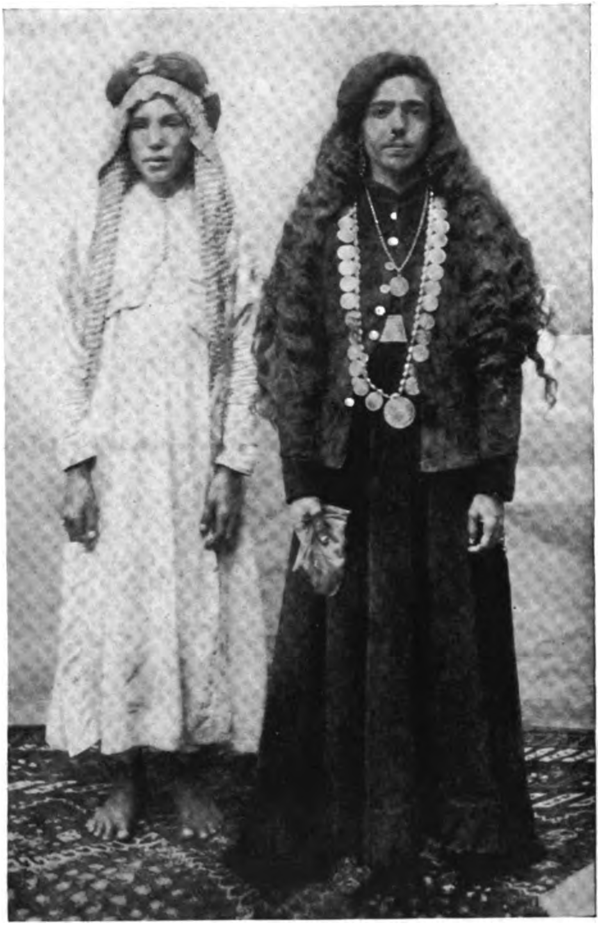


Photo by Frederick Simpich

AN ARAB WOMAN OF BAGDAD AND HER EUNUCH SERVANT

FANCY AS FACT

As we walked toward the doorway of the walled, windowless structure, wherein the women were imprisoned, my fancy rioted with visions of languorous Eastern beauties in baggy bloomers and gilt slippers. I thought of all the insipid, maudlin rot slung from the false pens of space-writers whose paths never led to this maltreated East. I thought of marble baths, wherein olive-skinned beauties

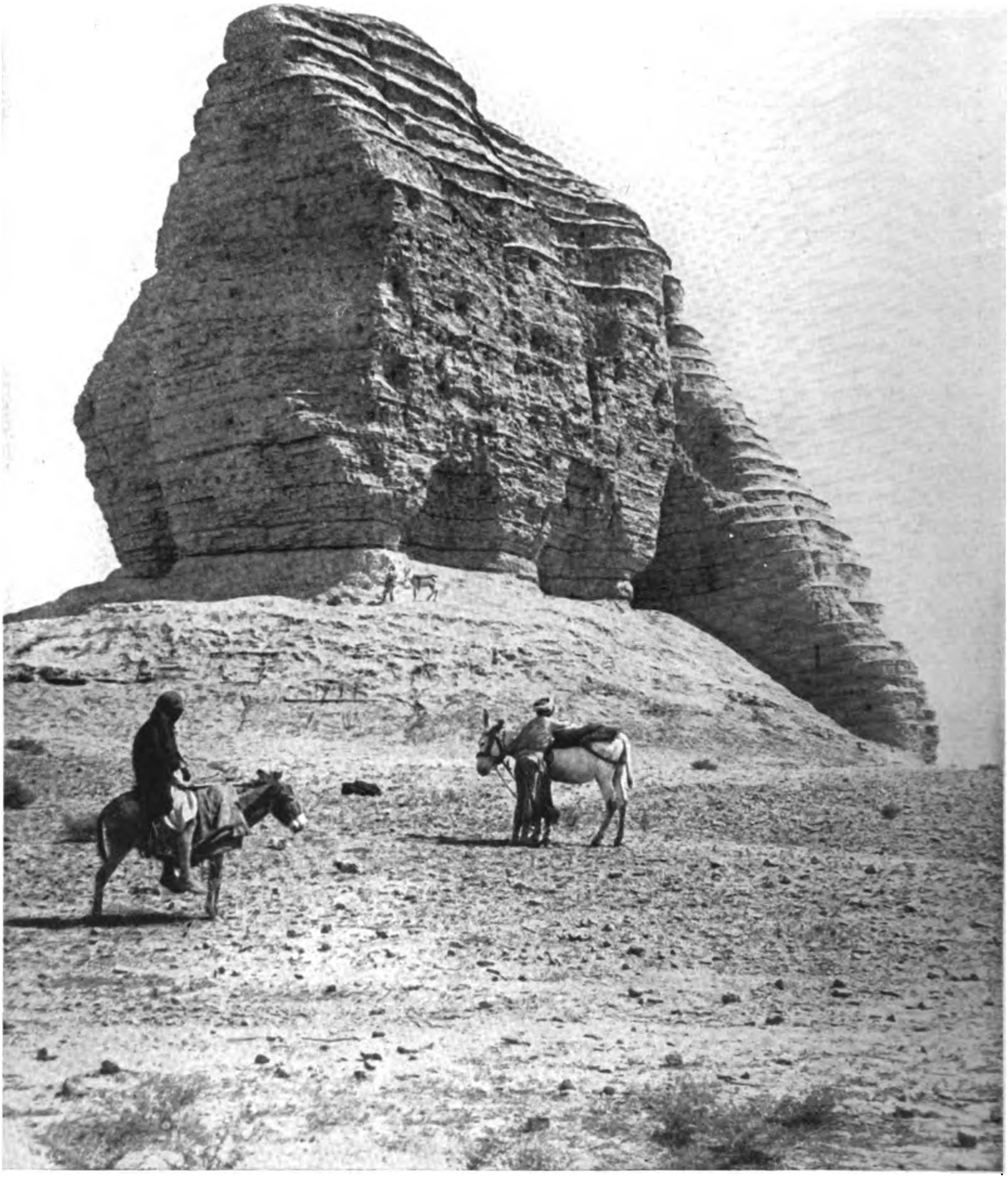


Photo and copyright by Underwood & Underwood

A LANDMARK OF BABYLONIAN DAYS, NEAR BAGDAD

"Time seemed to turn back twenty centuries when I stepped off the Tigris River steamer at Bagdad. Old Testament men in turbans, sandals, and quaint flowing robes ('abbas') crowded about, calling each other 'Yusuf' and 'Musa'—Joseph and Moses. . . . Sheep are slain to seal a vow, and the blood covenant is common. With their own shapely hands, Arab women still wash the feet of honored guests; upon their own heads they heap handfuls of dust when they mourn for their dead children" (see text, page 567).

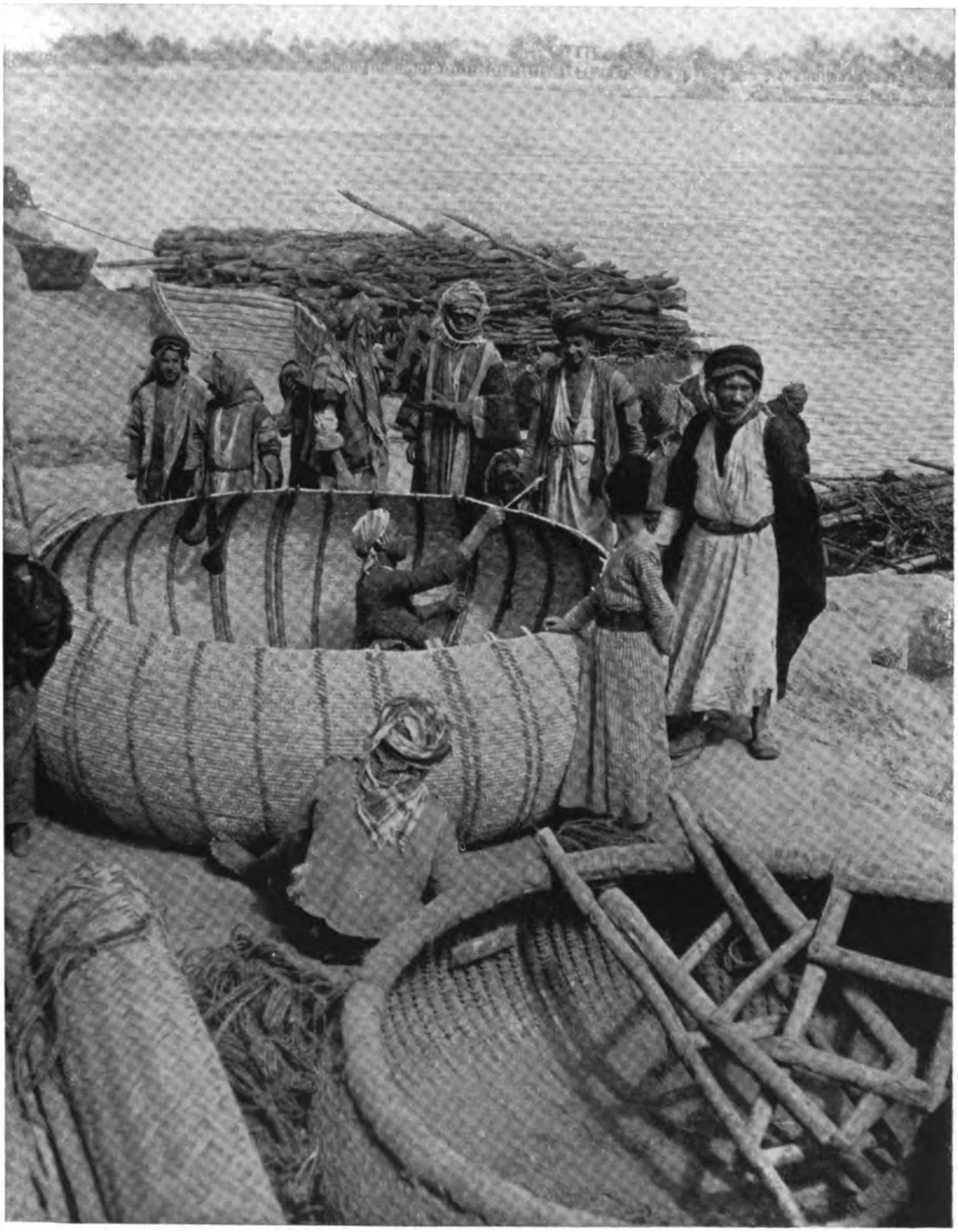


Photo and copyright by Underwood & Underwood

BUILDING THE PECULIAR ROUND BOATS, CALLED "KOOFAHS," ON THE TIGRIS RIVER, AT BAGDAD (SEE PAGE 549)

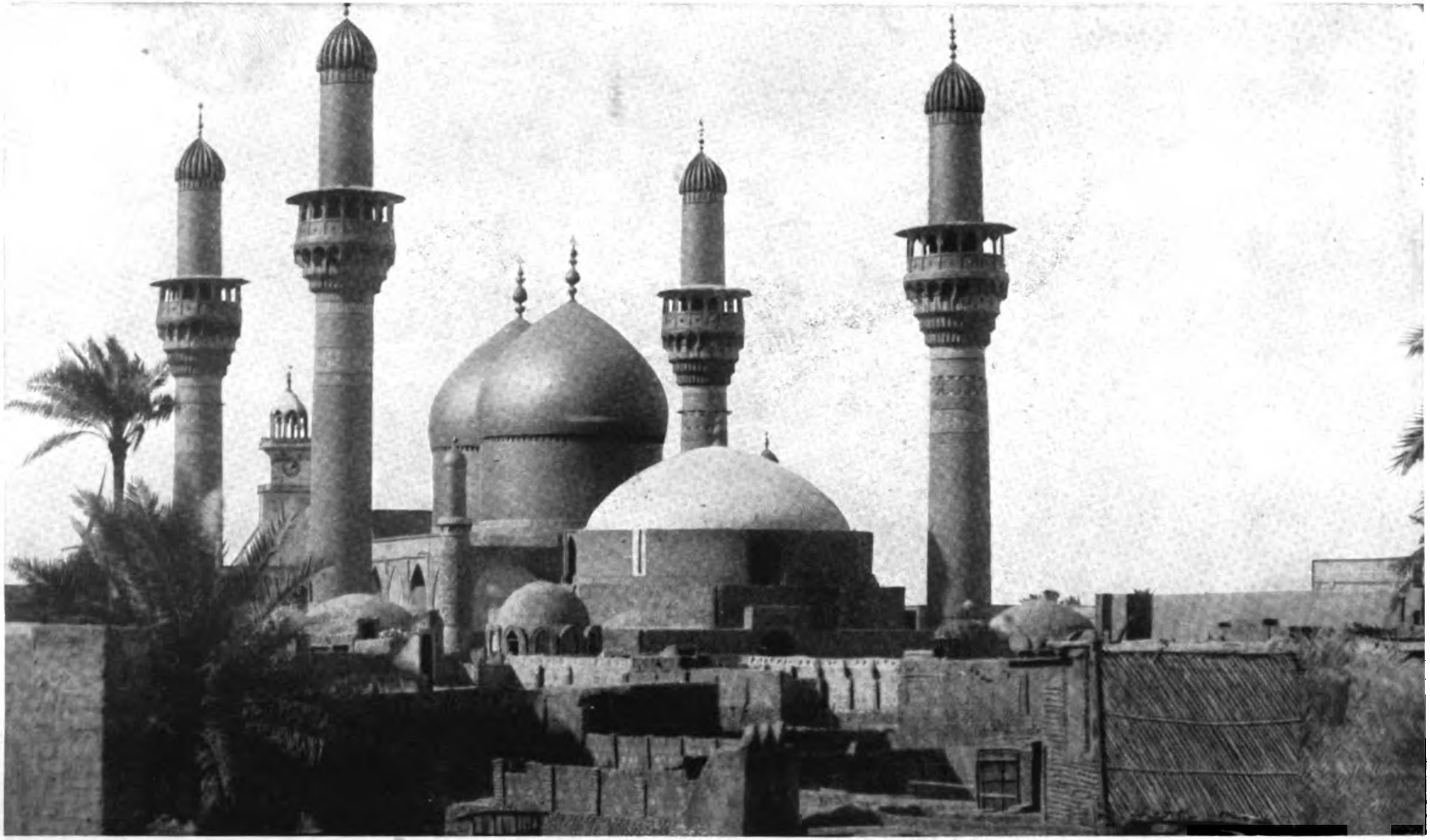


Photo by Frederick Simpich

THE GOLDEN MINARETS OF KAZEMAIN, A SHIA SETTLEMENT NEAR BAGDAD lolled, as in the toilet-soap advertisements. I thought of precious perfumes and beveled mirrors 30 feet high, of priceless jewels blazing on beautiful breasts, and of bronze eunuchs waving peacock fans, while sinuous serving-maids gently brushed the soft tresses of some harem favorite; but these dreams did not last long.

Almost before I knew it we had passed the great bolt-studded gate, stepped from behind a tall screen of hideous Persian tapestry, and were within the sacred precincts of the harem itself.

The interor was a great square court, surrounded on three sides by small rooms—the individual rooms of the Pasha wives and women folk. On the tiled floor of the court was strewn a variegated lot of cheap Oriental rugs and passats. A few red, plush-covered chairs and divans completed the meager furnishings.

THE WOMEN OF THE HAREM

Scarcely were we within when my host called out, and women began pouring from the tiny rooms. Fourteen females, of various size, shape, hue, and dress, emerged — each from her own little room. I looked at their faces—and their clothes—and I knew suddenly that all my life I had been deceived; it came over me that an amazing amount of rubbish has been written around the hidden life of harem women. And before I left that strange institution I felt that even Pierre Loti had juggled lightly with the truth in his harem romance, "Disenchanted."

The women before me were not beautiful—at least they were not to be compared with any type of feminine face and figure commonly thought attractive by men in our Western world. Two or three were exceptions; light of complexion, large-eyed, and not too fat, they resembled very much the Circassian maids—and possibly they were. Any one familiar with Turkey knows to what extent these girls—often very beautiful—have figured in the harem life, especially about the Bosphorus. Most of the women who stood before me in that Bagdad harem, however, were absolutely commonplace; some of them even stupid-looking.

COSTUMES OF THE WOMEN

A few wore bright-colored scarfs about their necks, with more or less jewelry on their ankles and wrists. The popular item of dress seemed a shapeless sort of baggy "mother-hubbard" like garment, worn over yellow trousers. Gilt or beaded slippers adorned the feet of the younger and better-looking women; the older ones were barefooted. None of them seemed to have made much of an effort at hair-dressing; two or three wore their hair loose, hanging in tangled wisps about their faces.

However, the old Pasha beamed with pride as he looked them over; and after all, if he was pleased, nothing else mattered. He introduced me all around and bowed himself out, leaving me alone with the fourteen. Two girlish youngsters—in their early 'teens—he had told me were his daughters; but to this day I do not know which of the several wives shared their ownership with him.

A MUTUAL SURPRISE

Hardly had the old Pasha withdrawn when the women were up and about me. And such chattering, giggling, exclaiming, pulling, and pushing as followed! It was a great day—a day long to be remembered—in that Bagdad harem. So far as I could learn, I was the first woman from the Western world who had ever visited there; I was the first white woman that some of the inmates had ever seen.

Think what a sensation would ensue in any American sitting-room if an Arab woman, her nails, lips, and eyelashes dyed, her limbs tattooed, rings in her nose, and anklets jangling, might suddenly appear—silk bloomers and all—in the midst of a crowd of Yankee women! Our own composure and self-restraint might not be any greater than that showed by these Arab women at Bagdad when I, an American girl in street clothes, appeared among them. They crowded about, feeling my hands and face, getting down on their knees to admire my high-heel shoes, stroking the skirt of my blue tailored suit, behaving like excited children with a new toy. My hat-pins were a source of great wonder, and my tight-fitting coat brought forth many a fervent "All-a-a-h!"

They asked me, too, how many children I had; how old I was; if there were many women in Amerique, and inquired eagerly how many wives my husband had, and wanted to know how I had managed to get out of the harem alone.

PITY FOR AMERICAN WOMEN

When I told them I was a Christian—a "Kaffir," they call it—and that in my country men have but one wife, and that she may go and come as she likes, they spoke aloud their disappointment and pity for me; for these women do not wish to leave the harem. It would shock them to walk alone, unveiled, in the street. These women will not even expose themselves to the chance sight of passers-by in looking from the latticed windows—if there happen to be any windows—in the houses where they live. They count it immoral to be seen by other men than their husband.

"America must be a poor country," said one, "if your husband can keep but one wife; a Bedouin keeps but one woman—and all the Bedouins are poor, because they live on the barren desert." From their viewpoint, the multitude of a man's wives, slaves, and retainers is the measure of his greatness.

Love, except that of the mother for her child, is undoubtedly an emotion absolutely unknown to these women; whence it follows that jealousy, too, must be but an infrequent disease.

Yet, poor in mind as these imprisoned women seemed, and painfully inquisitive as they were, kindness cloaked all their curiosity, and their every act displayed a friendly feeling for the strange woman—the heretic—in their midst. They brought in a great tray of dried fruits, baked gourds, toasted pumpkin seeds, and fresh pomegranates; they brought me wine, too, made from the juice of dates. They offered me long Arab cigarettes, called "Bagdaddies," when the repast was finished; and when I declined to smoke they found new cause for wonder, for I lied for my country and told them that American women never smoke.

It was a great day for me, reared in the normal quiet of an old Missouri town. If only my knowledge of Arabic had

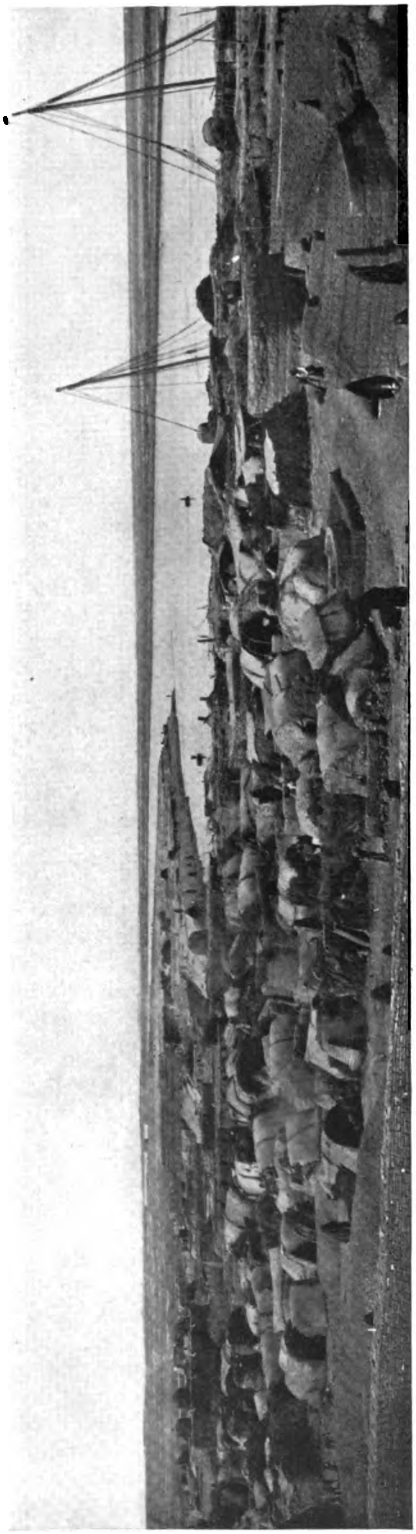


Photo by Frederick Simpich

REED HUTS ON THE EUPHRATES NEAR KERBELA

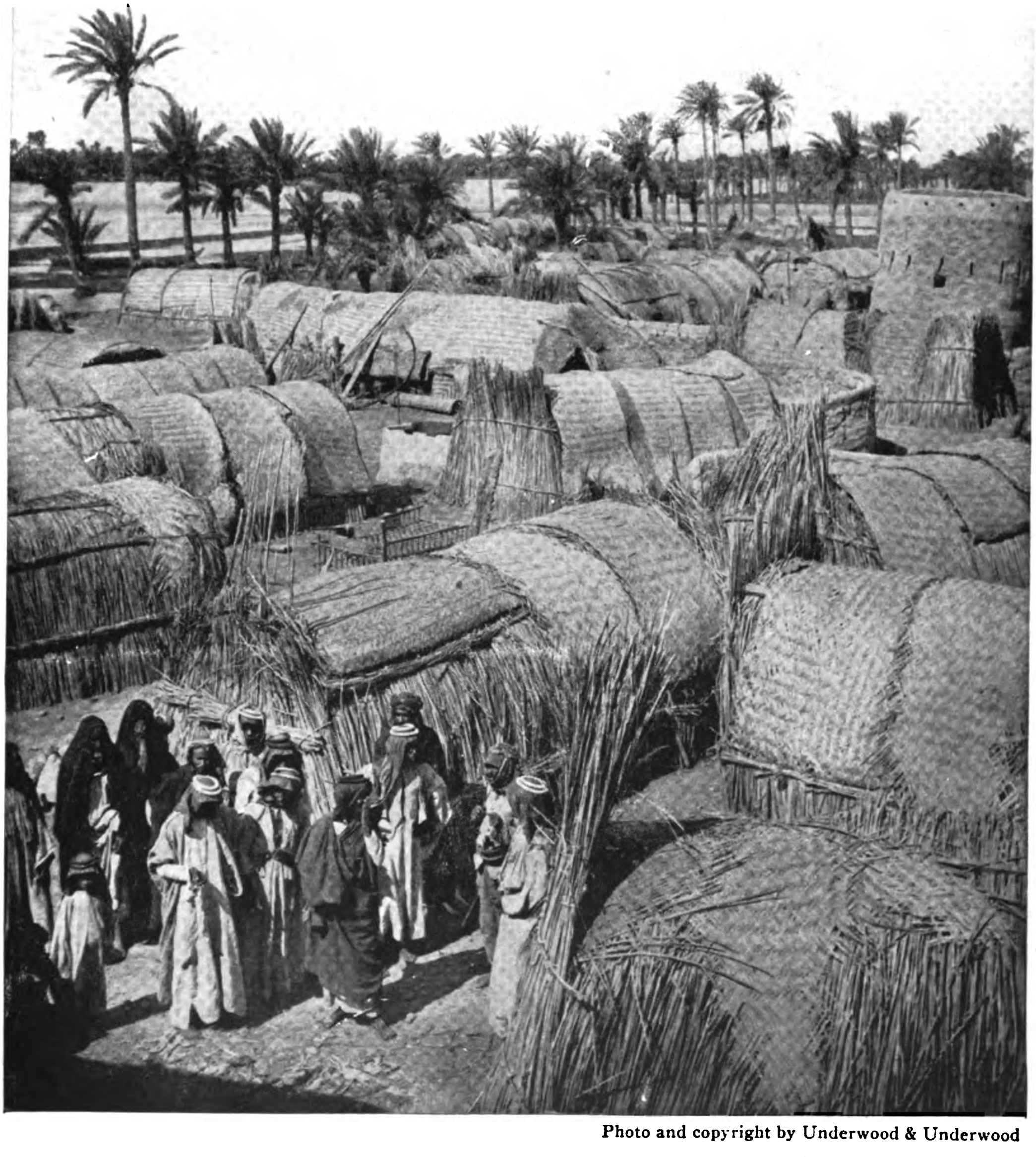


Photo and copyright by Underwood & Underwood

ARAB VILLAGE OF REED MATS AND ROUND FORT ON LOWER EUPHRATES

"Few Arab women I met had ever even heard of America. One or two, whose husbands sold wool and dates to Bagdad traders, knew there was such a place as 'Amerique,' but they believed it merely a part of that far-away land called London, from whence came their bright calico and the cheap guns used by the sheiks in tribal wars. Even the men can tell the women little of the world beyond the desert's rim" (see text, page 567).

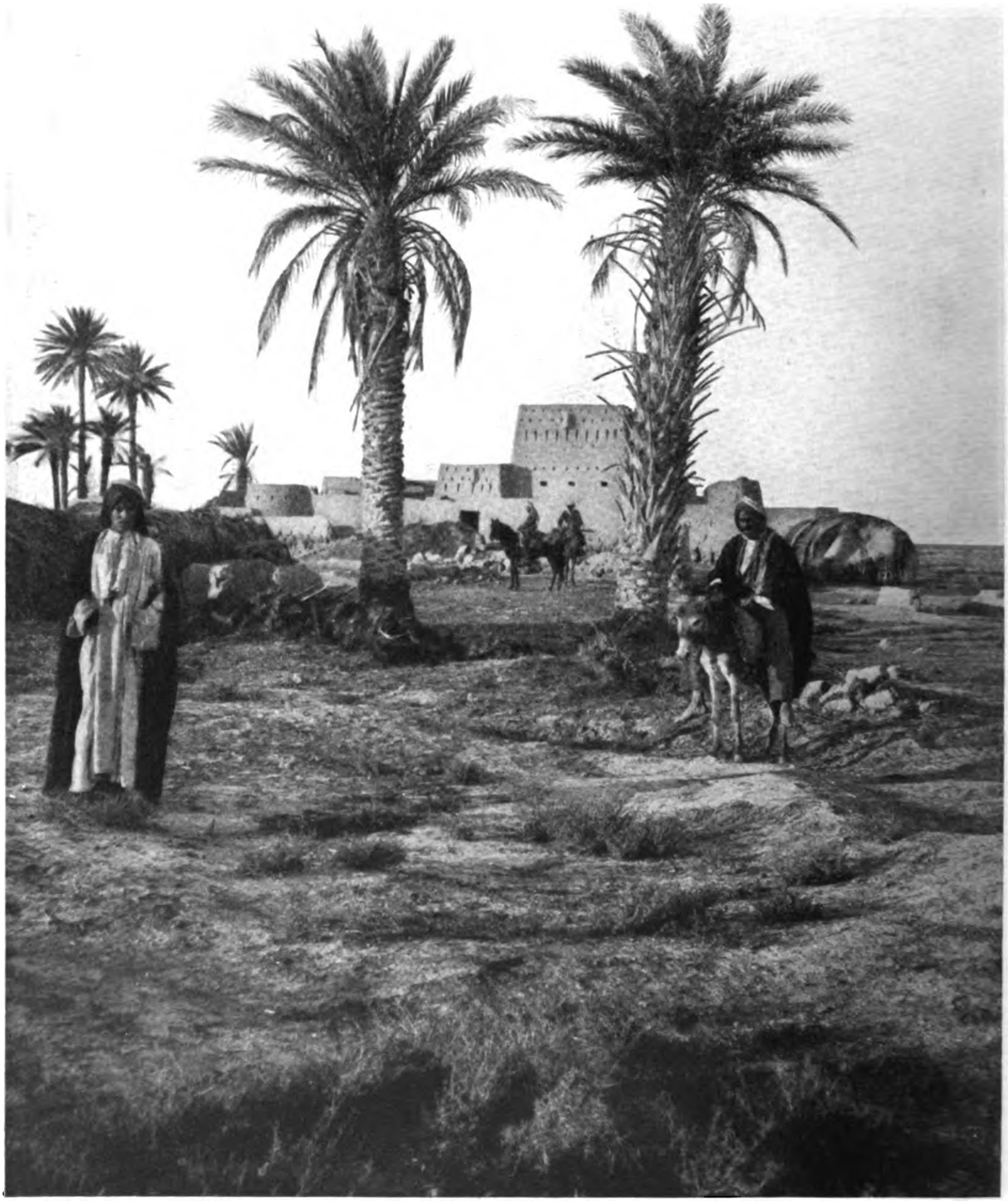


Photo and copyright by Underwood & Underwood

TYPICAL ARAB VILLAGE AND FORT: LOWER BABYLONIA

"Fifty miles west of Bagdad, along the Euphrates, lies the region now commonly regarded as the Garden of Eden. To irrigate this Eden and to reclaim millions of fertile acres around Bagdad is the stupendous task to which the Turkish government has addressed itself" (see text, page 560).

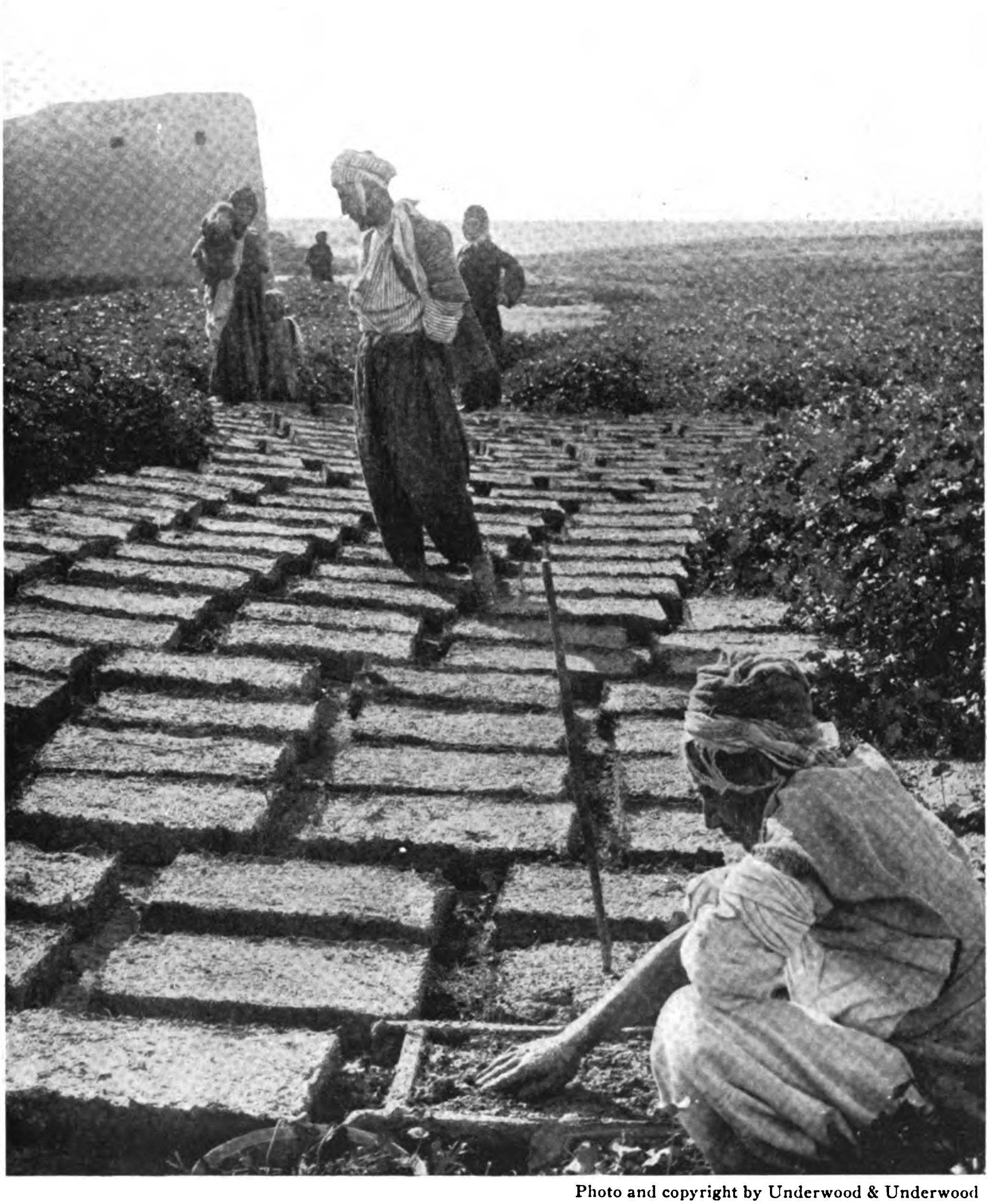


Photo and copyright by Underwood & Underwood

A BRICK FACTORY NEAR NINEVEH: MAKING SUN-DRIED BRICKS

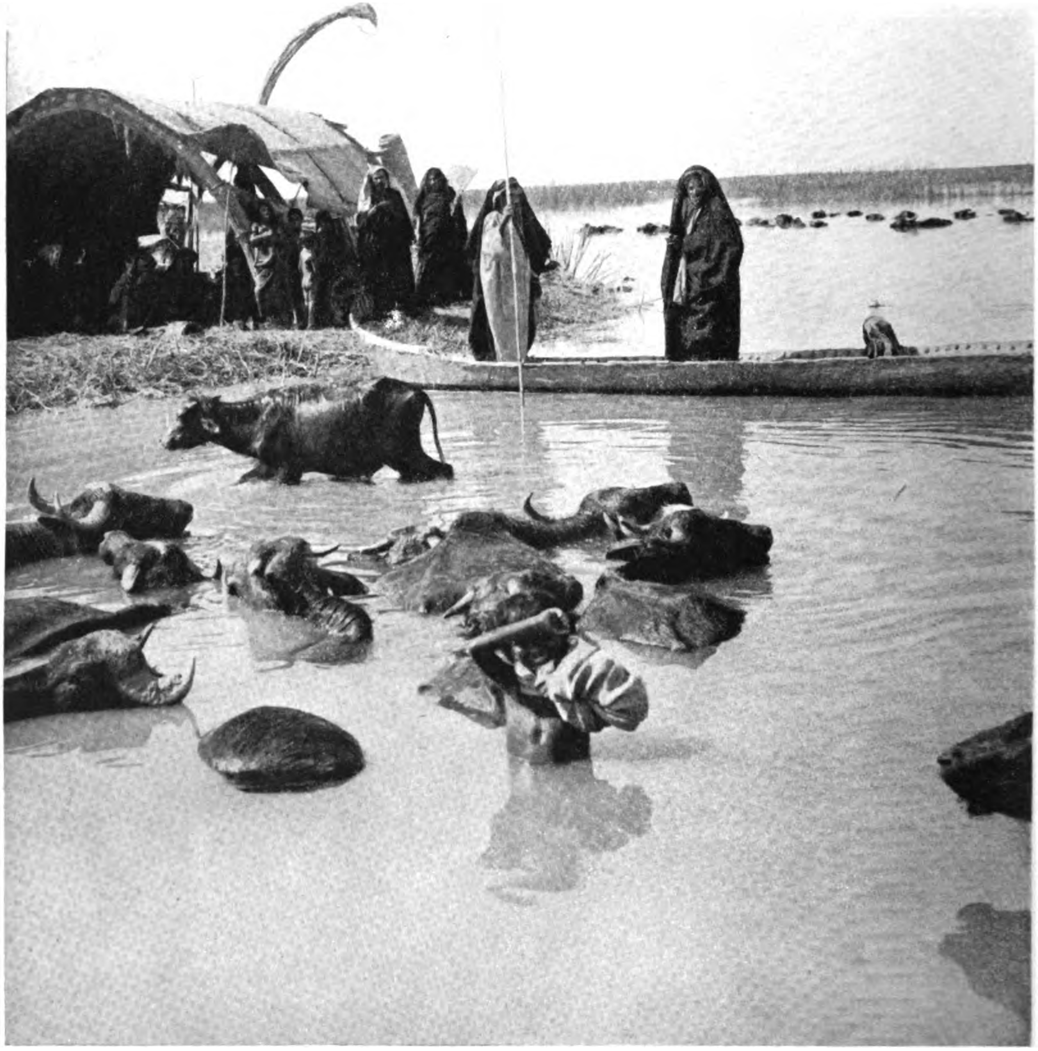


Photo and copyright by Underwood & Underwood

TENT OF ARAB CHIEF AND WATER-BUFFALO ON FLOODED BABYLONIAN PLAIN

"Useful as the Bedouin wife is to her husband and the tribe, however, through all the tribal songs, legends, and poetry, there runs a note hostile and abusive of all womankind. A woman's nature is inherently wicked, the Bedouins say, and, like a cat, she has nine lives. They believe that in all other animals save mankind the female is the better. Doughty, in his work on Arabia, says: 'The Arabs are contrary to womankind, upon whom they would have God's curse'" (see text, page 585).

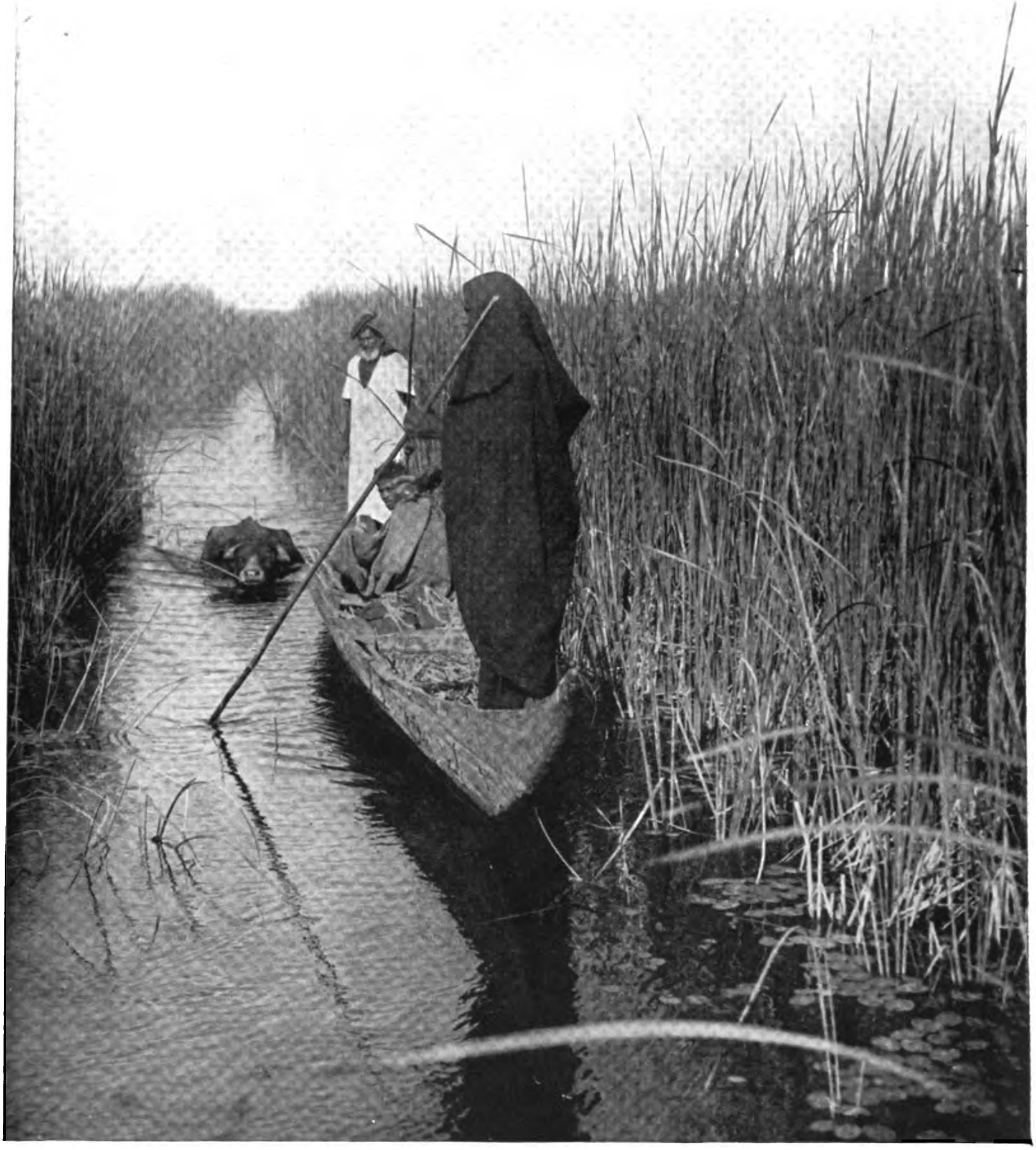


Photo and copyright by Underwood & Underwood

POLING A WAY THROUGH REEDY MARSHES OF THE LOWER TIGRIS AND EUPHRATES PLAIN been better, or some of the women had known more French, this story would be much longer.

When I finally rose to go, I asked them, though I knew they would not comply, to come and visit me. In this part of the Moslem world upper-class women go about but little. In Constantinople, where reform germs are working, the women have begun to clamor for permission to attend public entertainments, theaters, etc. But it's thirty days by caravan from Bagdad to Constantinople, and the modern spirit of the capital is felt not at all in the secluded harems of the old home of Harun-al-Rashid.

The sudden reappearance of the old Pasha, as he came to conduct me to my carriage, threw the whole fourteen into a noisy panic of giggles. One of the younger women, dropping to all fours, hid her face behind her arms and accidentally burned a hole in the rug with her fallen cigarette. Think of a high-spirited American girl kneeling or hiding her face just because a mere man entered the room!

THE DESERT WOMEN ARE DIFFERENT

Among the Bedouin women of the nomad Arabs the ease and indolence of harem life is unknown.

From early childhood she must serve, first her father and then her nomad husband. Arab maids of eight and ten years tend the sheep and goats, wandering alone out on the desert miles from the camp; but they are safe.

Bedouins, as a rule, have but one wife. Being Moslems, they are allowed four, but few avail themselves of the privilege. Perhaps one wife is all the average Bedouin can support. In all the Mohammedan world no man takes more than one wife, unless his means permit him to keep the extra women in comfort. It has been said, too, that one desert woman is all the average Bedouin can manage.

In a way, these nomad women have been suffragettes for centuries. From our point of view, the Bedouin woman is a mere slave, with no rights at all; yet tribal customs accord her certain considerations, and if her husband mistreat her, she is able to make it very lively for him. All the lusty-lunged women of the camp leave off milking the camels and join with the aggrieved wife in a joint assault on the offending husband. They gather about his tent, screaming out abuse and heaping on his helpless head all the invective and vilification in which the Arab tongue is so copiously rich.

I have seen such a man, humiliated under the stinging jeers of half a hundred angry women and taunted by the derisive shouts of the amused male spectators, flee from his tent, mount his horse, and gallop away, utterly routed by the women.

WOMAN'S PLACE IN THE TRIBE

For years war has been waged intermittently between the Jebbel Shammar and Æneza tribes west of the Euphrates, and it is said that in many of these desert conflicts, when hundreds of spearmen have perished, the combatants on either side were encouraged by Bedouin maids mounted on swift camels, who kept to the front, shouting cheering words to the brave and reviling the laggards with withering Arab sarcasm.

The fortitude of Bedouin women on the march is traditional. On the long "hajj," or march, to Mecca, over the hot sands, their suffering is intense; yet they keep the pace, do all the work, bear children on the way, and arrive when the "brave" men do. So great is the physical courage of these women that they have often been known, as their hour for delivery approached, to halt beside the trail, bring a child into the world, and then overtake the marching caravan before nightfall.

Lady Anne Blunt, who traveled among the Euphrates Arabs with her husband, speaks thus of the Bedouin women: "As girls, they are pretty in a wild, picturesque way, with cheerful, good-natured faces. Some of them get real influence over their husbands, and, through them, over the tribe. In more than one sheik's tent it is in the woman's half of it that the politics of the tribe are settled. They live apart from the men, but are in no way under restraint." A Bedouin tent

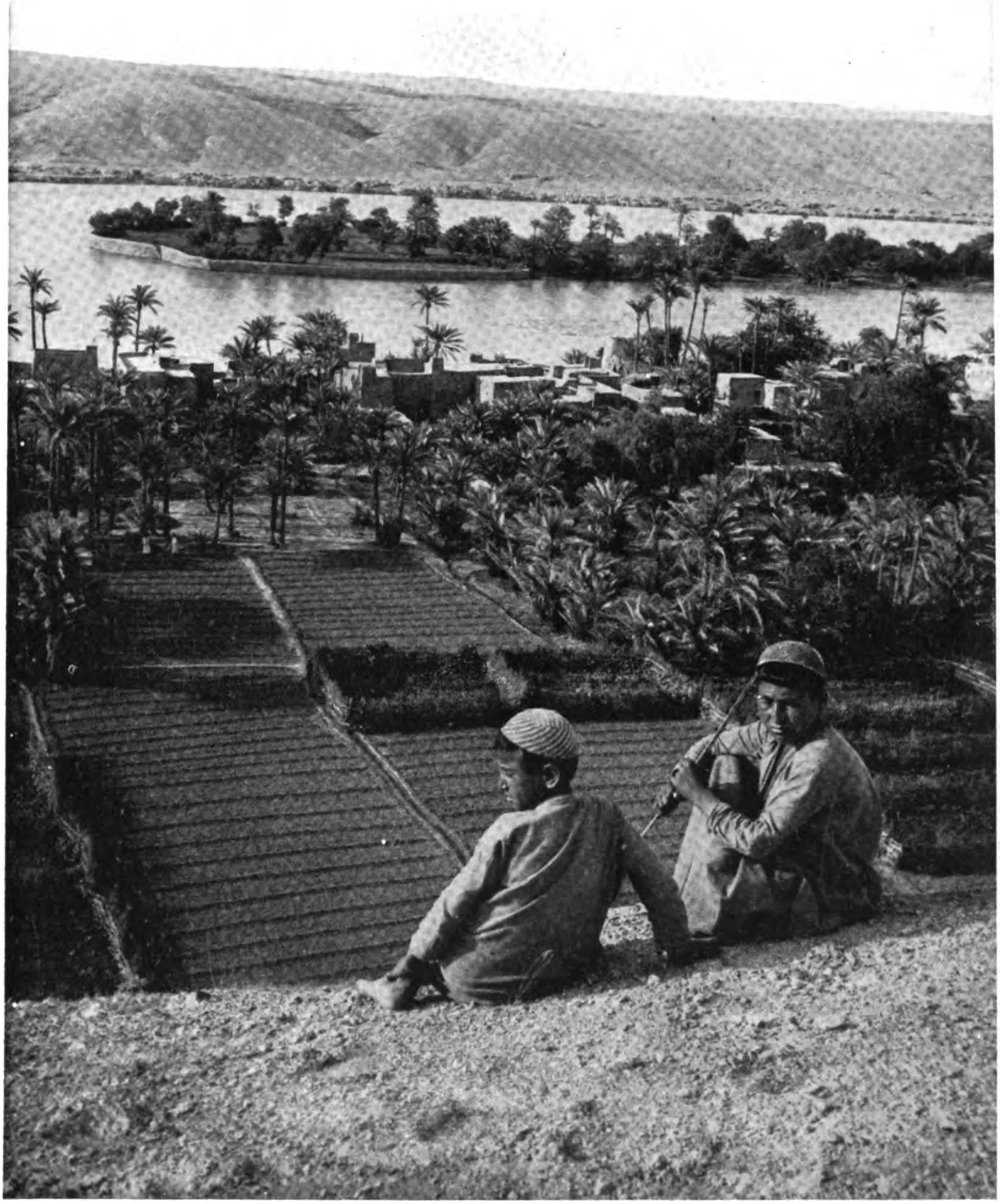


Photo and copyright by Underwood & Underwood

THE TRADITIONAL "GARDEN OF EDEN," LOOKING EAST OVER THE EUPHRATES VALLEY

"As yet no 'Seeing Bagdad' motor-busses hum along the Tigris, and the horde of Yankee tourists get no nearer Bagdad than Damascus and Jerusalem; but the railway is encroaching fast, hastening the day when travelers to the East may avoid the long sea trip via Suez. Then, with the 'Hanging Garden Inn' thrown open to the public, 'Edenville' and 'Babylon' made places of interest, with side trips to Jonah's tomb and Nineveh, Bagdad will compete with Cairo as a tourist center, and men will come back to poke curiously about Adam's old home" (see text, page 585).

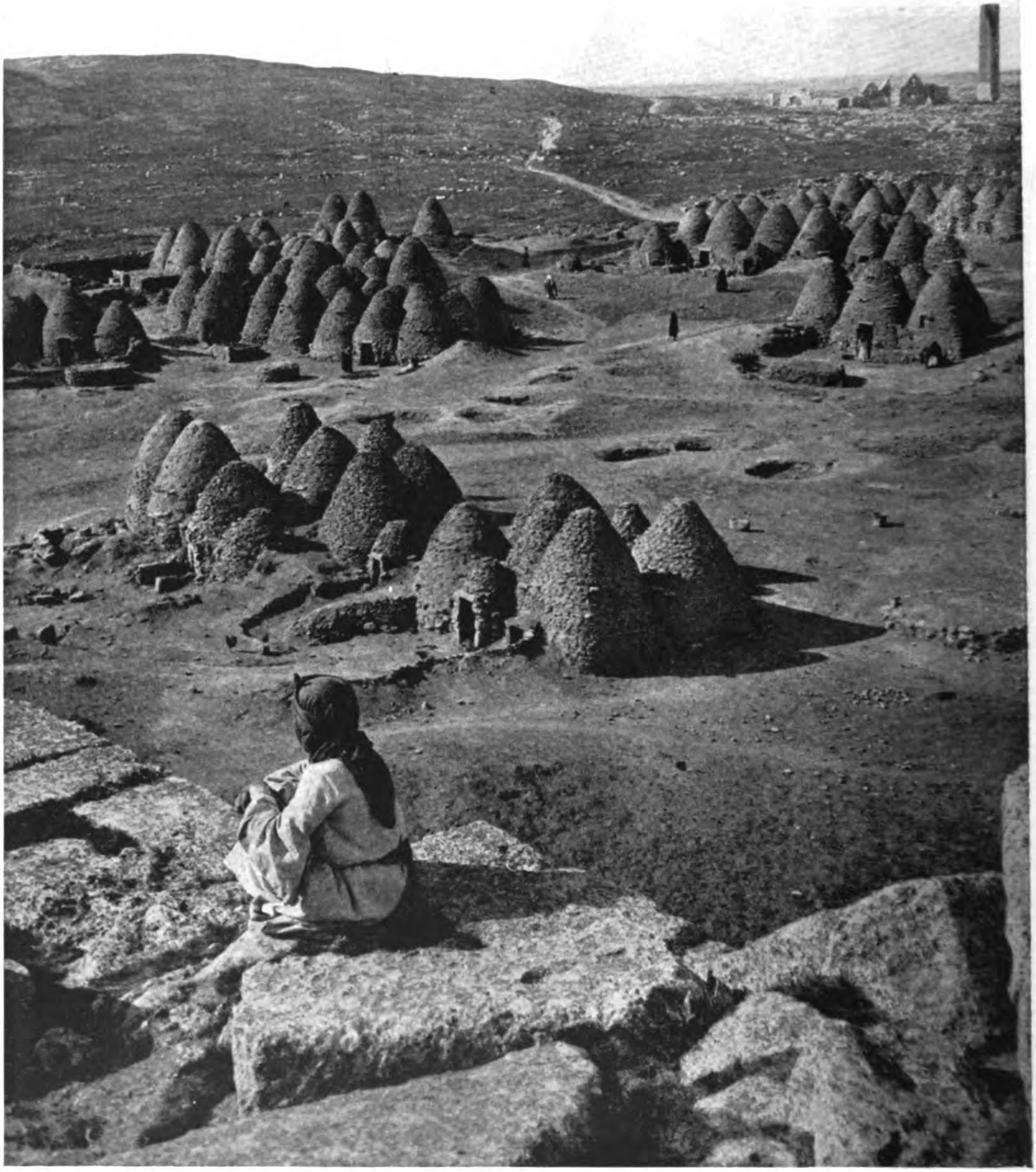


Photo and copyright by Underwood & Underwood

VIEW FROM A "BEE-HIVE" VILLAGE OF THE ARABS NORTHWARD OVER HARAN

Out in the plain of Haran, where Abraham sojourned, the surveyors have driven their stakes for the 'iron road' within eight or ten paces of the well which by ancient tradition of the Arab tribes is the very well where Rebecca watered the camels at eventide. Soon the freight trains will be rushing by and the camel caravans will be forced farther back into the desert.

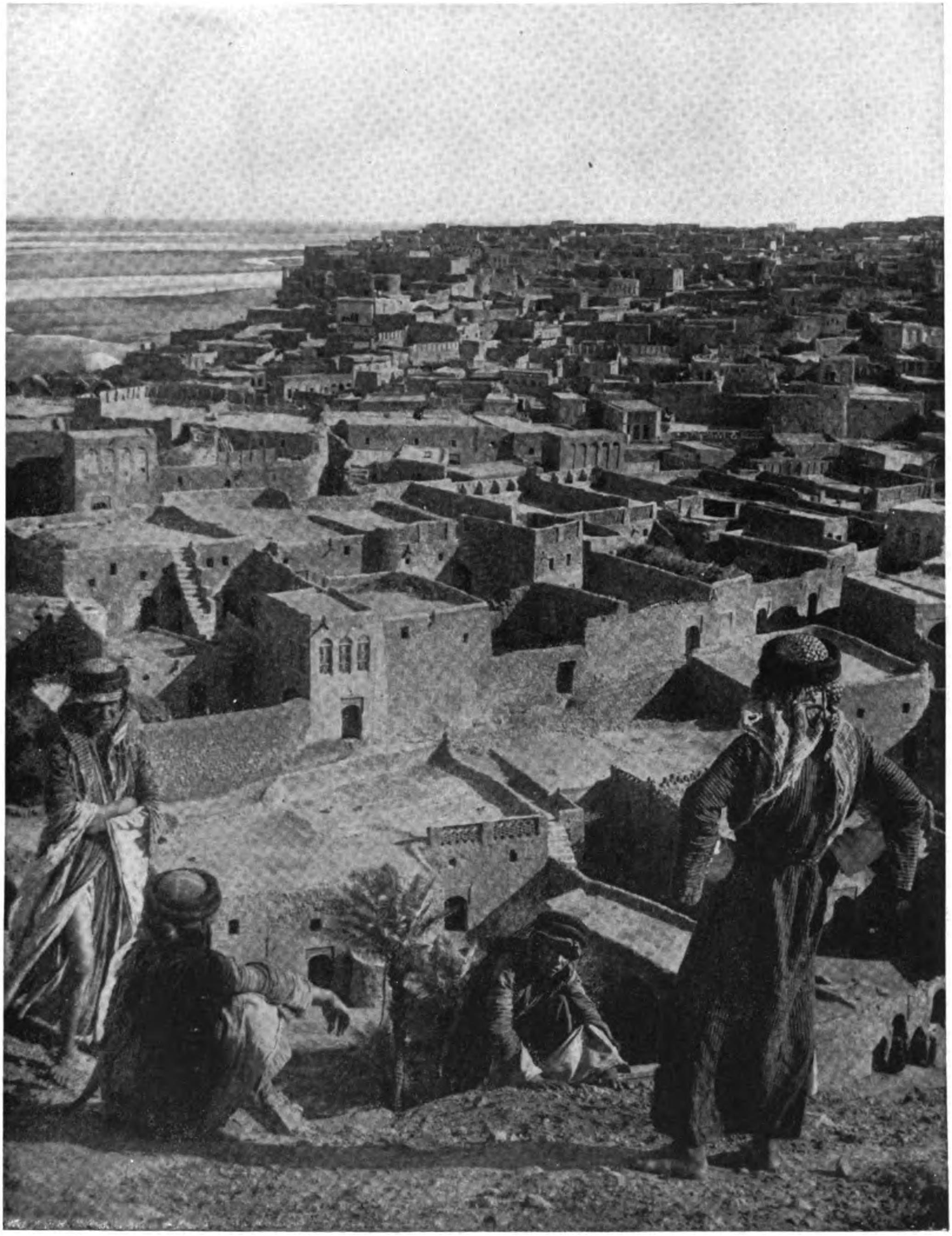


Photo and copyright by Underwood & Underwood

THE CITY OF TEKRIT, ON THE TIGRIS, LOOKING SOUTHEAST

Tekrit is one of the oldest towns in southwestern Asia, dating from the days of the Persian Empire itself. It is said to have been founded by Shapur I. The city is located on the Tigris River and formerly vied with Bagdad and Mosul in importance. Now it is but a minor place on the Tigris trade route.

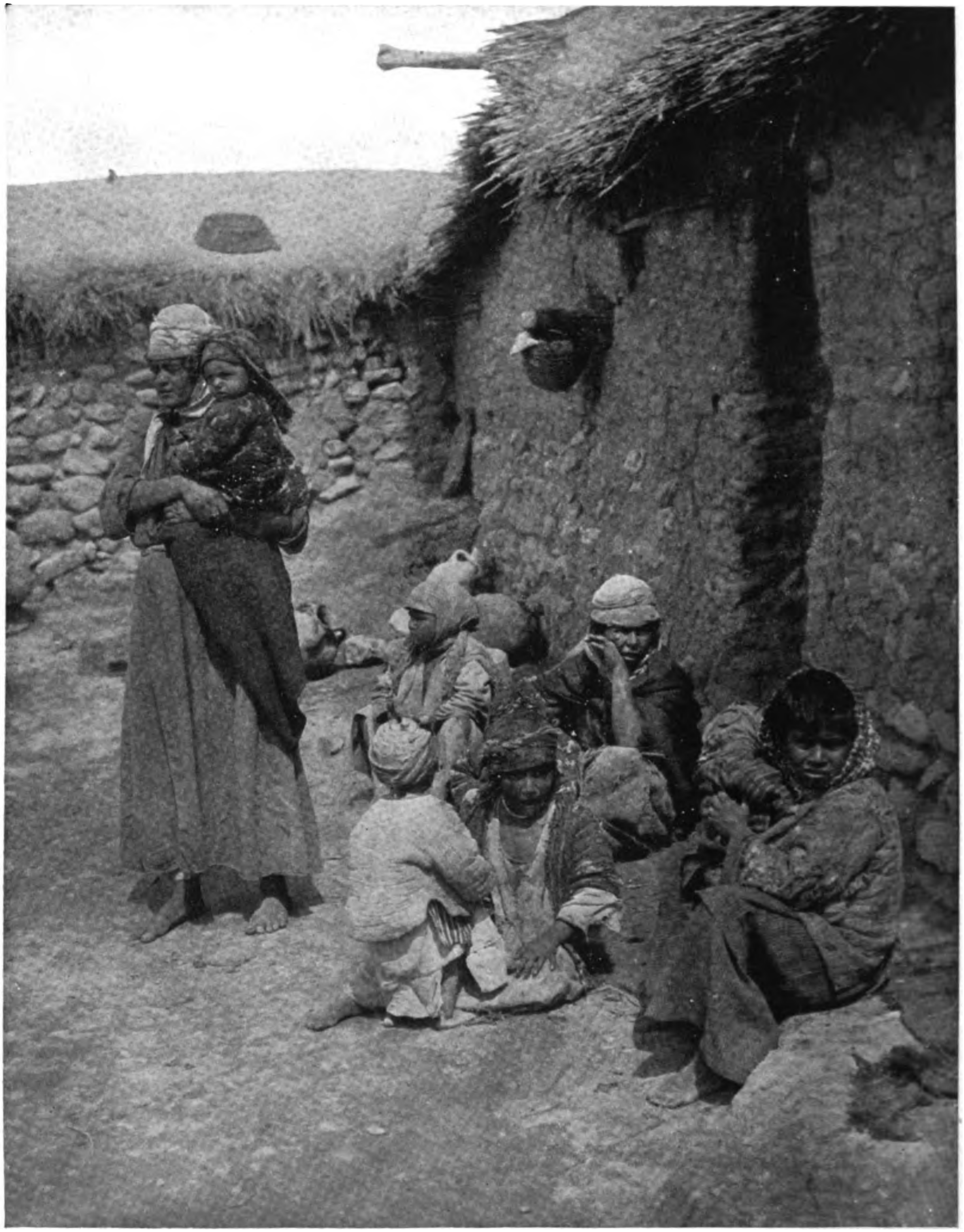


Photo and copyright by Underwood & Underwood

AN ARAB FAMILY OF THE UPPER TIGRIS REGION: MESOPOTAMIA

"An uncanny, pernicious pest called the 'date boil' scars the face of every human born in Bagdad. Children invariably have this dreadful sore on their faces. Throughout the Middle East this mysterious scourge is known by various names—'Buton d'Alep,' 'Nile sore,' 'Delhi button,' etc. Its cause and its cure are unknown. First a faint red spot appears, growing larger and running a course often 18 months long" (see text, page 562).

is divided into two parts; where the men stay is called the "selaam-lik"; the women's apartment is known as the "harem-lik." A high curtain separates the two. Cooking utensils, children, and clothing are stored in the harem-lik, while the guns, spears, camel saddles, etc., are piled in with the men.

An Arab is jealous of his wife, but on the desert married women are seldom veiled and are permitted to laugh and joke with other men. In camp the women milk the camels, grind wheat in a hand-mill, churn butter in the "sequilla," a goat-skin hung from a tripod and filled with sour milk; they weave cloth from hair and fiber; they make matting from date leaves and are always busy. While the Bedouin woman is enjoying all these pleasing domestic pastimes her husband sits in the sand before the tent smoking.

BEDOUIN SUPERSTITIONS

Some of their superstitions are fanciful indeed. They believe that when a man dies of thirst that his soul goes forth in the form of a green owl, which flies about above the desert a thousand years, screaming for water. If a fish leaps from the water into a boat where a woman is riding, it is a sure sign that she will soon bear a son. They live in daily dread of the Evil Eye; the Arab mother fears for her child, lest this curse descend and blight its life. Some say a man so possessed has merely to cast his baneful glance on a bird flying, when the creature will fall to the earth stone dead. If an Arab woman finds the threads in her "nuttou"—loom—have become tangled, she blames the meddlesome evil spirits. Many women have their limbs and bodies tattooed in fancy designs, as much as a charm to ward off disease as for beauty's sake.

Manna is still much eaten among Mesopotamian Arabs; the women collect and prepare it from the ground beneath certain hill trees, from whence it drips. Yet the Arabs—and the Jews and Chaldeans as well—firmly believe that this sweet, whitish gum-like food is cast down from heaven; that it is the same manna which tradition says was cast down from heaven for the Children of Israel.

DISTRUST OF WOMANKIND

Useful as the Bedouin wife is to her husband and the tribe, however, through all the tribal songs, legends, and poetry, there runs a note hostile and abusive of all womankind. A woman's nature is inherently wicked, the Bedouins say, and like a cat she has nine lives. They believe that in all other animals save mankind the female is the better. Doughty, in his work on Arabia, says: "The Arabs are contrary to womankind, upon whom they would have God's curse."

In all the year I spent in the Middle East I never heard of an Arab woman who could read or write. To educate a woman is called by Bedouins a foolish waste of money. Women are at the bottom of all the evil in the world, Arabs say, and jehannum—hades—is full of them. Here are two of Burton's translations of Bedouin ballads, which show in what esteem the nomads of the desert hold their women folk:

"They said, marry! I replied:
'Far be it from me
To take to my bosom a sackful of snakes.
I am free. Why, then, become a slave?
May Allah never bless womankind!'"

"They declare woman to be heaven to man;
I say, Allah, give me jehannum, not this heaven."

As yet no "Seeing Bagdad" motor-busses hum along the Tigris, and the horde of Yankee tourists get no nearer Bagdad than Damascus and Jerusalem; but the railway is encroaching fast, hastening the day when travelers to the East may avoid the long sea trip via Suez. Then, with the "Hanging Garden Inn" thrown open to the public, "Edenville" and "Babylon" made places of interest, with side trips to Jonah's tomb and Nineveh, Bagdad will compete with Cairo as a tourist center, and men will come back to poke curiously about Adam's old home.

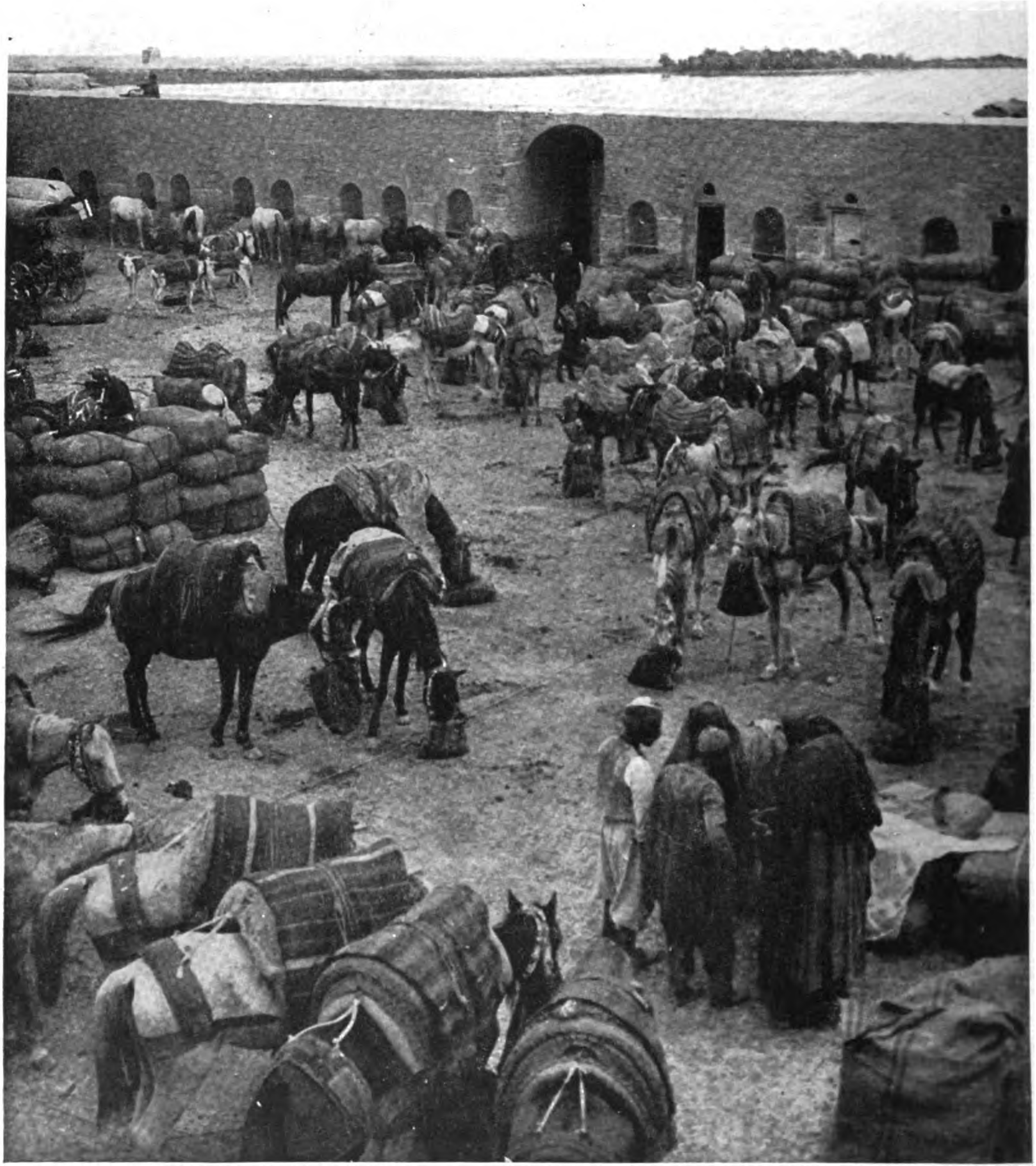


Photo and copyright by Underwood & Underwood

A LARGE INN, OR CARAVANSERAI, AT FELUJA, ON THE EUPHRATES

The caravanserai of Asiatic Turkey are strongholds erected by the government on the great caravan routes, where passing caravans may rest for the night secure from marauders. They are large, walled-up, rectangular enclosures, with a single big gateway, furnished with robber-proof doors and chains. Around the central court, which usually is paved, there are grouped store-rooms, and above them the sleeping quarters. A porter lives permanently within the enclosure and extends the government's welcome to the passing caravan seeking rest and shelter. The caravanserai is always kept open from early morning until late at night for the reception of wayfarers. A tip to the porter is the only fee for the use of the caravanserai.

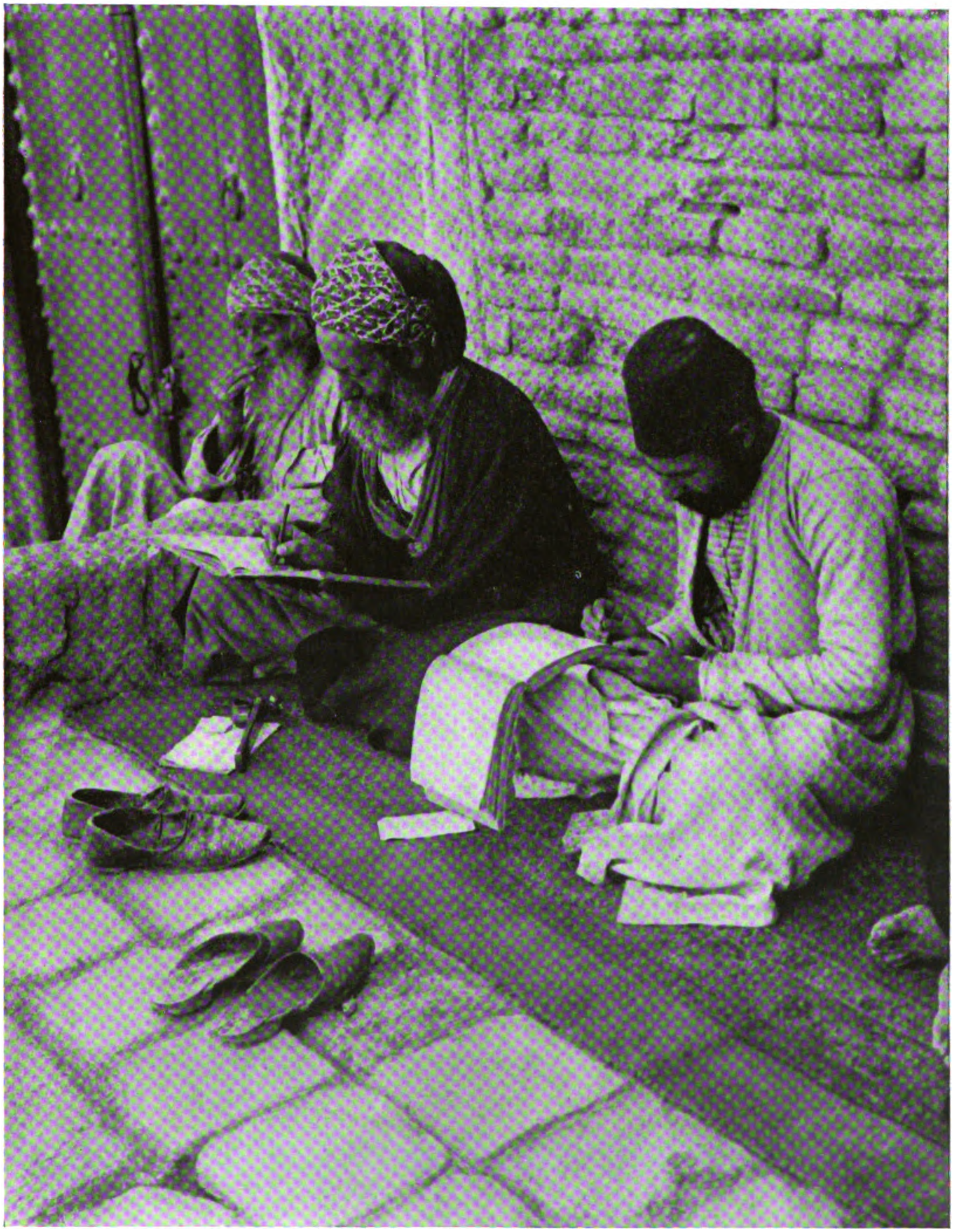


Photo and copyright by Underwood & Underwood

JEWISH SCRIBES AT THE "TOMB OF EZEKIEL," NEAR BABYLON

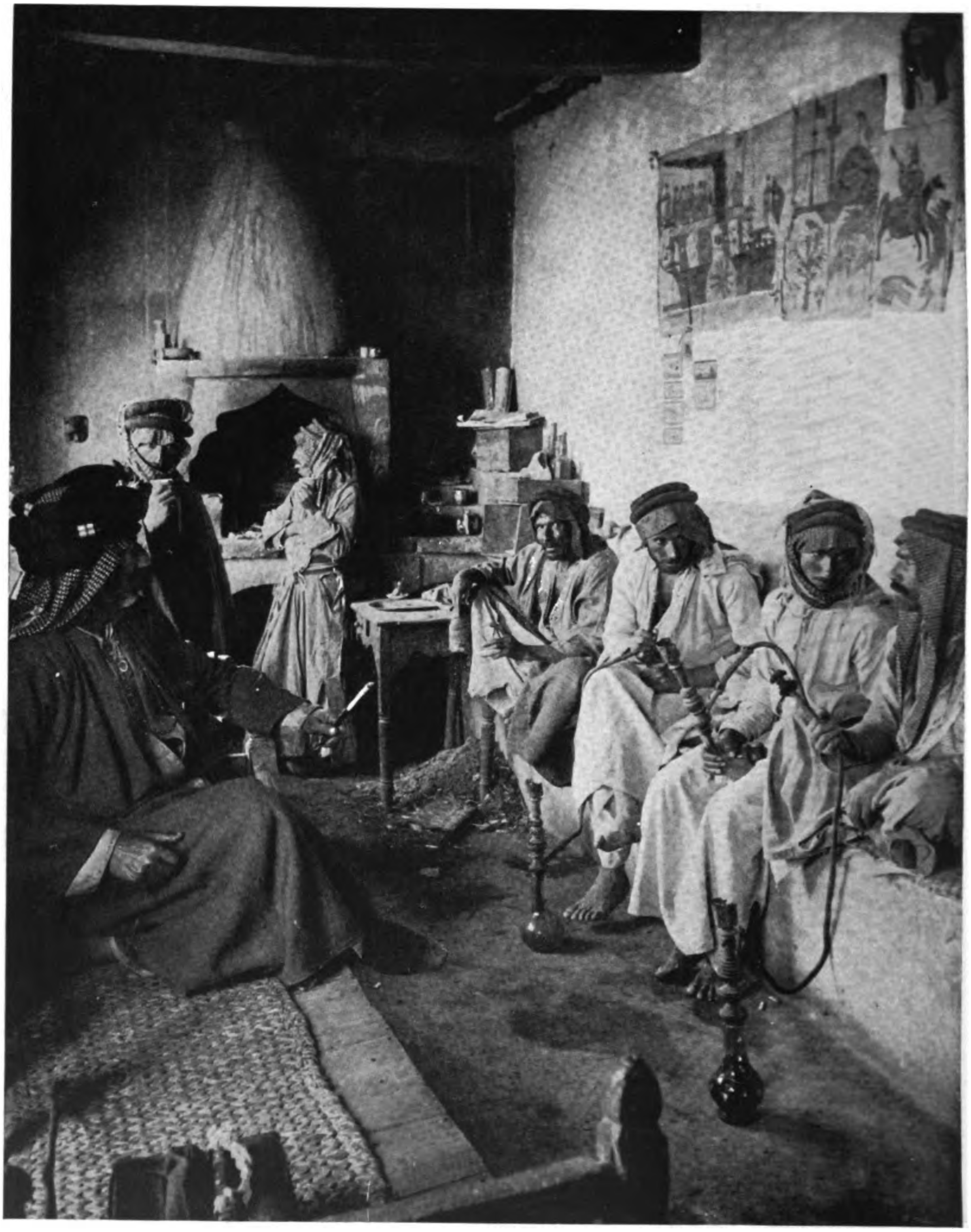


Photo and copyright by Underwood & Underwood

ARAB LEISURE IN A COFFEE-HOUSE OF MOSUL

Across the river from the ruins of ancient Nineveh, Mosul occupies the site of a southern suburb of the biblical city. There is almost as much of "the city of the dead" within the crumbling limestone walls that surround the town as there is a city of the living, for a large share of the land within these walls is taken up by cemeteries. Mosul has a population of about 40,000. One of its sights is the leaning minaret of the Grand Mosque, which formerly was a church dedicated to St. Paul.

MYSTIC NEDJEF, THE SHIA MECCA

A Visit to One of the Strangest Cities in the World

By Frederick Simpich

FEW white men of any race have made the pilgrimage to mystic Nedjef, the Mecca of Shia Mohammedans and one of the marvels of inner Arabia.

It is five days by mule or camel caravan from Bagdad to Nedjef, and in the eventful centuries since the Shias founded Nedjef—on the spot where a nephew of the Prophet Mohammed was slain—it is estimated that over 25,000,000 Moslems have made the pilgrimage to this mysterious desert city of golden domes, fabulous treasures, and weird rites.

Thousands of devotees from the Shia hordes of India, Persia, and South Russia flock through Bagdad each year, bringing with them their mummified dead—salted and dried—for burial in the holy ground about the mystic city. By camel caravan and winding mule train the patient pilgrims make the long march; many from distant Turkestan are a whole year making the round trip. To help handle the throng that pours through Bagdad each spring and autumn, enterprising Bagdad Jews have established an "arabanah," or stage line, from Bagdad to Kerbela, the half-way town on the desert route to Nedjef. And for a taste of stage-riding in Arabia, I started my journey by arabanah, a four-wheeled coach drawn by four mules harnessed abreast (see page 592).

It was 2 o'clock on a starlit morning when I walked over the rude bridge of boats that spans the Tigris at Bagdad, ready for an early start from the west bank. Soon the jolting, noisy coach was in motion, the Arab driver cursing the religion of his four mules and plying his long whip of rhinoceros hide as we whirled away through the still empty streets. Only a few watchmen, shouting occasionally to keep up their courage, and the eternal vagabond dogs of Bagdad were astir.

Through the outlying Sunni cemetery we rolled past the beautiful tomb of Zobeida, favorite wife of Harun-al-Rashid (see page 558), past the white tents of sleeping Turkish troops, through a gap in the ruined wall, and out onto the gray desert. The mules galloped evenly on, the wheels hummed, and we seemed to float over a sea of haze that lay on the desert, bathed in starlight.

Thus till dawn, when we reached the first relay post, Khan Mahoudieh, a mud-walled desert stronghold, where we got fresh mules, tea, and a few minutes rest. All about was noise and confusion; some 500 Persians, surrounded by their camels, donkeys, dogs, and rolls of baggage, were making up their caravan for the day's march to the Euphrates. Soon we were off again, the fresh mules leaping forward in their collars and jerking the bounding arabanah along at a lively clip.

We passed many caravans of pilgrims, mostly Persians, the bells of their lead animals tinkling musically, the long-legged camels groping through the half light of early day. Women rode in covered boxes, like bird-cages, slung one on each side of a mule or camel. A few upper-class persons rode in swinging palanquins, carried between animals walking tandem. Hundreds of the Persians, their legs wrapped in bandages like puttees, plodded along on foot, driving their baggage-laden donkeys before them. The country we passed through from Bagdad westward comprised a vast, dry plain, barren and desolate and flat as a great floor.

Near noon the fringe of date palms marking the course of the Euphrates lifted from the desert horizon, and an hour later we rode into the river village of Mussayeb. Here also a bridge of boats is found spanning the Euphrates at the point where some say Alexander and his Ten Thousand crossed on their way to Babylon. On the west bank we got fresh mules, and soon passed through the belt of fig and date gardens that flourish along the river. Before us the desert reappeared—a barren, treeless plain. Smooth it was, save where we bounced over the banks of ruined canals, remnants of the irrigation system built ages ago by the Babylonians.

Half way to Kerbela, and scattered for a mile along the route, we passed a caravan taking corpses for burial at the holy city of Nedjef. Among the dead was the body of a Persian nobleman. Three hundred paid mourners, who had come all the way from Teheran, sent up their weird chant as we passed.

Strict as are the Turkish quarantine regulations, badly "cured" bodies or bones are often smuggled in from Persia, and on a hot day the wise traveler will stay at a discreet distance from these death caravans. The odor, when noticeable, is peculiarly penetrating and sickening.

It is a month's marching from Teheran to Kerbela, and these dismal persons had wept all the way.

Kerbela, likewise a sacred Shia city, we reached about four in the afternoon.

THE PILGRIM HORDE

Kerbela sucks life from the unending pilgrim horde. Myriads of Shias have come and gone in centuries past, and millions are buried in the plain outside the city. Of its 75,000 permanent residents, nearly all are Shias. Hussein, martyred son of Ali, is buried in the magnificent mosque of Kerbela, and in the vaults about his tomb are stored the priceless offerings of the Shias who have come to pray, and paid tribute to the Mujteheds, or interpreters of the law. These Mujteheds, of whom there are twelve, have long been a thorn in the side of Persia's government. Safe in their retreat at Kerbela, they have hatched many of the political plots that made murder and riot in Teheran.

As early as 1350 Kerbela was known as a retreat for learned Moslem teachers. Shah Namat Ulla studied at Kerbela and lived 40 days on dust, tradition says. Many of his prophecies still live. In her book, "On the Face of the Waters," Mrs. Steele quotes one of them, as follows:

"Fire worship for a hundred years,
A century of Christ and tears;
Then the true God shall come again,
And every infidel be slain."

Major Sykes, in his work on Persia, says this prophecy was on every one's lips a generation ago and was perhaps the main cause of the Indian mutiny.

The Wahabi marauder, 'Abd-Allah, looted the treasure vaults of Kerbela in the last century, pillaged the tomb of Fatima's son, and slew nearly the whole population of the city. In Zehm's "Arabie" (page 332) is a list of the booty taken, comprising gold tiles from the dome of the mosque, great quantities of gold coin, rich Kashmir shawls, etc., and many Abyssinian slaves.

Beyond the mosque, however, Kerbela has few attractions for the traveler. The people showed no resentment as I wandered through the narrow bazaar on the evening of our arrival. I slept the night in a mud-walled khan, surrounded by scores of talking, singing, swearing, quarreling Persians. Donkeys, camels, dogs, and chickens were all crowded together with the human element of the caravans; but an hour after dark quiet ensued, for men and beasts who march all day must sleep at night (see page 586).

At dawn the confusion of the crowded khan awakened me, and I was glad when my servant said our mules were ready and we might be off. Fortified with a hasty breakfast of dates, Arab bread, and tea, we extricated our mules from the fighting, scrambling horde before the khan gate and moved away. It is two days by caravan from Kerbela to Nedjef, though the distance is less than 60 miles.

An hour south of Kerbela we came once more upon the desert, dreary and monotonous. Vast spots appeared covered with a thin, salty crust that crackled as the mules walked over it. After a few miles these spots faded away and we entered on a rolling sea of gray sand, the margin of the great waste that sweeps Arabia from Kerbela and Nedjef to Mecca, Aden, and the Red Sea. Our six mules filed head to tail. Besides my servant, two zaptiehs (soldiers) came also. The governor of Kerbela had sent them as an escort. The Turkish authorities refuse to be responsible for the

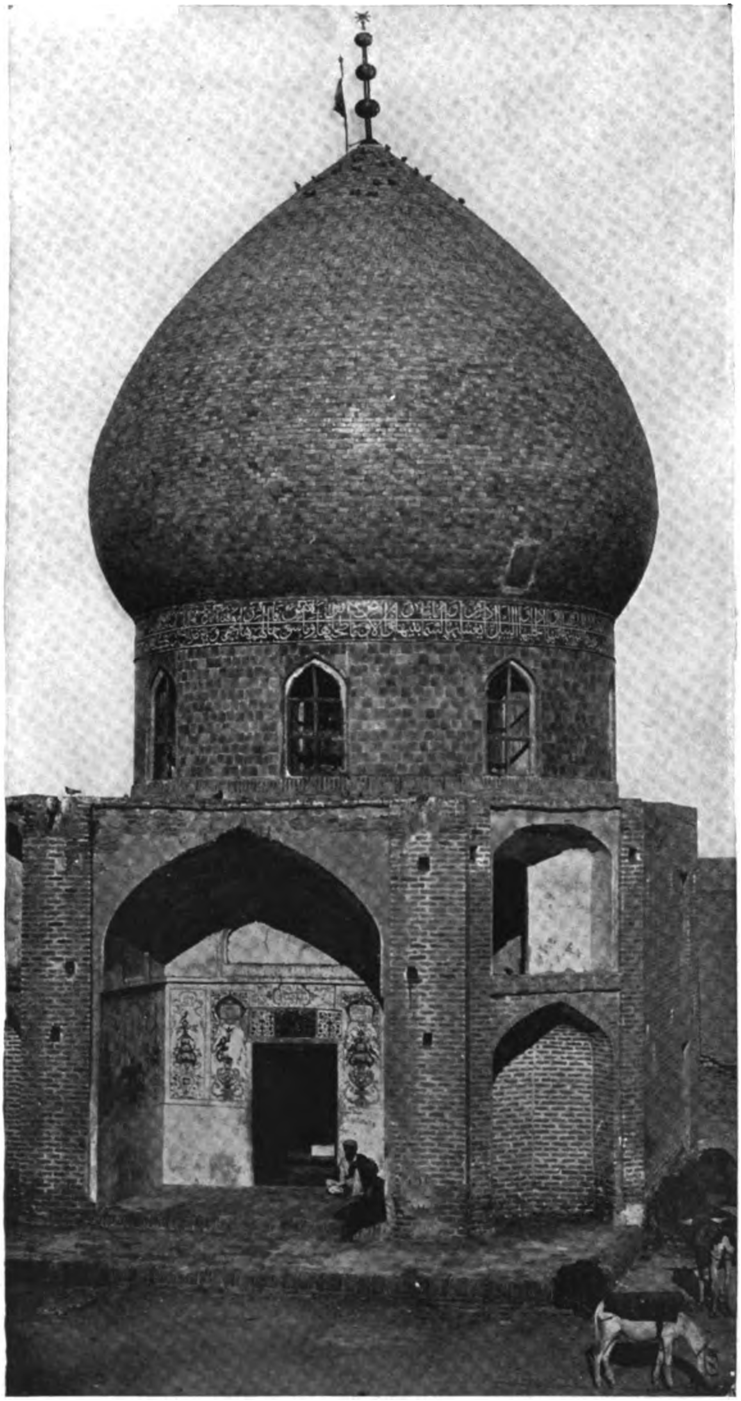


Photo by Frederick Simpich

A MOSQUE NEAR KERBELA, WITH ODD MURAL DECORATIONS ABOUT THE PORTAL: NOTE THE PIGEONS ON THE DOME (SEE PAGE 592)

"Kerbela sucks life from the unending pilgrim horde. Myriads of Shias have come and gone in centuries past, and millions are buried in the plain outside the city" (see text, page 590).

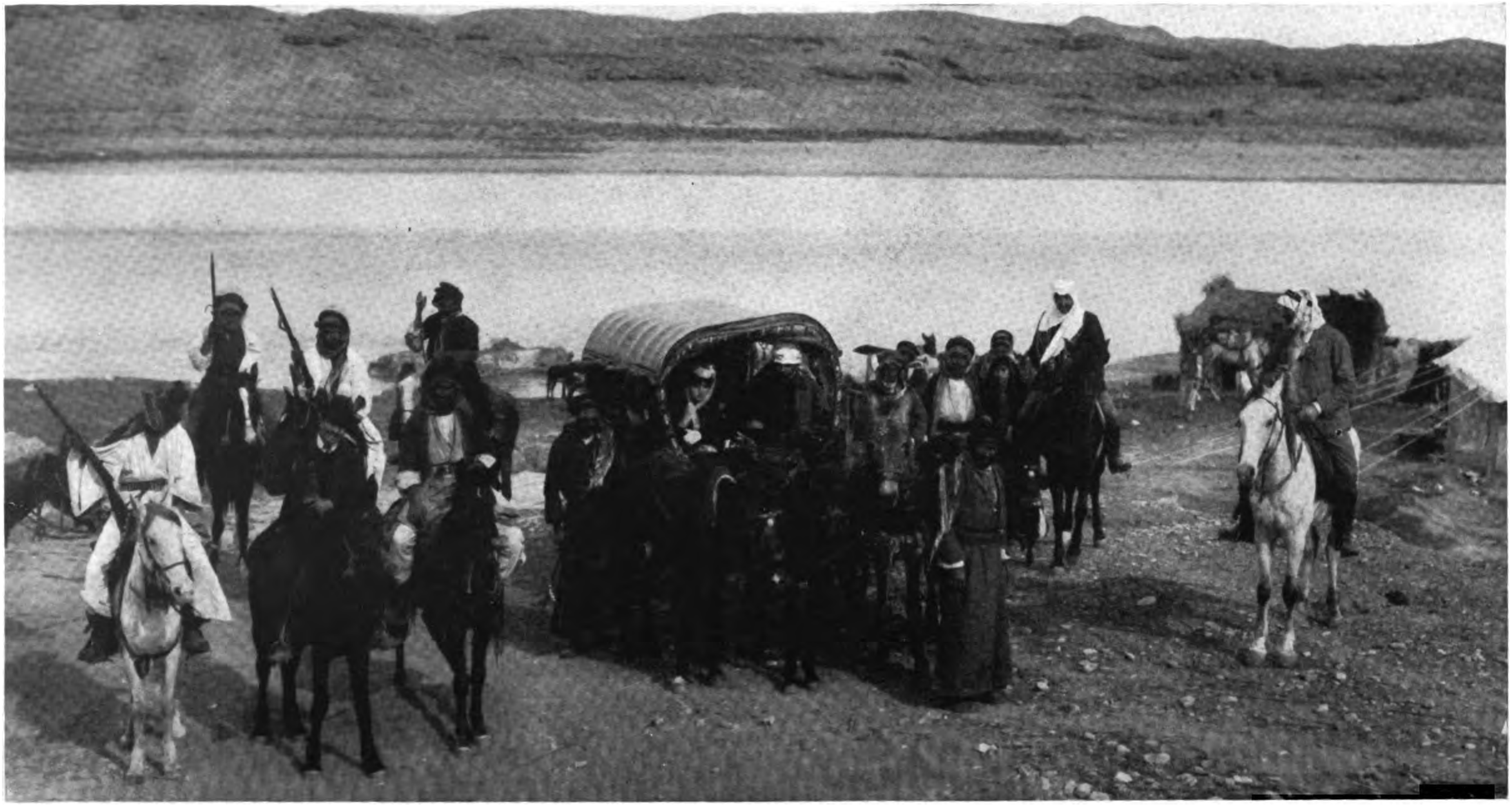


Photo by Frederick Simpich

TRAVELING BY THE FOUR-MULE COACH, CALLED ARABANA, ACCOMPANIED BY A GUARD OF ZAPTIEHS, OR SOLDIERS: MESOPOTAMIA safety of foreigners who travel in Arabia without a government guard.

THE DESERT TRAIL

All about us lay the flat, empty world. Not a tree, a shrub, a plant, or a bird—not an object, dead or alive—broke the vast stretch of sun, sand, and silence. Only the muffled footfalls of the plodding mules, or the soft, slopping sound of water splashing in the goatskins, came to our ears. At times we rode up and down over billows of gray sand, stretching away to the right and left in endless swells like giant furrows.

I wondered how the zaptiehs kept the trail; often I could see no signs that previous travelers had passed our way, so quickly does the wind obliterate tracks in the shifting sand. Bones of dead camels and mules lay along our path at intervals. The wind plays in tiny eddies about them and prevents their being covered up with sand. For long, still hours we held our way, pushing always south.

The day was well spent when we came upon the mean, mud-walled khan built at the wells marking the half-way resting place. Already others who traversed the desert had reached the friendly spot. They proved a caravan from the busy Euphrates town of Kuffa, and were on their way to the stronghold of the Amir of Nejd. Rumors of fighting between Arab clans on their direct route had sent them on this round-about course. Half a hundred pack-camels laden with bales of Manchester "piece-goods," bags of rice, and Marseilles sugar in blue cones, lay about, chewing contentedly, or nosing among the meager clumps of camel's-thorn which grew about the camp.

The rough, half-clad camel drivers rested on their haunches, talking volubly and plying my servant with questions as to my nationality, destination, wealth, family relations, etc. And I am sure that in his replies the boy, Naomi, allowed my reputation to suffer not at all. To the Bedouins, all foreigners are Ferenghies ("Franks"). These camel men had not heard of America, and asked if it were a part of London.

One camel man watched over a smoky fire of dried camel dung, where coffee was boiling. Water from the well was green and brackish, and I imagined it smelled of camels; but coffee made of it tasted like any other. Naomi got my meal ready—dates, bread, and coffee, with a bowl of lebban, curdled camel's milk. Off to themselves, the two zaptiehs ate, smoked long Bagdad cigarettes, and talked in low, droning voices.

Sleep is sweet in the pure air of the Arab desert, and soon I lay dreaming. Only once I was awakened, when a restless camel came sniffing near. Overhead burned the planets, big and steady in their glare, like near-by arc lights. About rose the snores of tired, sleeping Arabs; the bulk of herded camels loomed large, and I heard the low crunching of their rolling cuds. The glow of the night watch's cigarette came to me from one side; in Bedouin camps no one knows the hour when desert thieves may come.

The gurgling grunt of camels rising stiffly, under unwelcome loads, roused me at dawn. Already the west-bound caravan was astir, making ready for the day's march. The drivers were testing the ropes of twisted palm fiber which held the packs to see that all was fast. Then, urged by sharp blows from the stout sticks and cries of "Ek, oosh, ek, oosh!" the clumsy beasts rose reluctantly, their odd, thoughtful faces stuck high in the air. Soon our own mules were ready, and we mounted to ride away southward to Nedjef. The rude, blaspheming camel men of the Amir's caravan shouted us their adieus as they trekked off, miles of waterless plain between them and Nejd. But their goatskins were tight full of water; as for the camels, they would not need to drink.

All day we followed our course, as on the day previous, through seas of sand. Toward noon we met hundreds of Persians returning from the pilgrimage. All the men could now dye their beards red and enjoy the title of Hahji—one who has made the Hahj, or pilgrimage. Soon I, too, would become a Hahji, for Nedjef was now near at hand.

NEDJEF, THE MYSTIC

The sun was nearly down, sliding like a fire ball from the copperish sky, when we caught the first glimpse of holy Nedjef. First the great gold dome of its

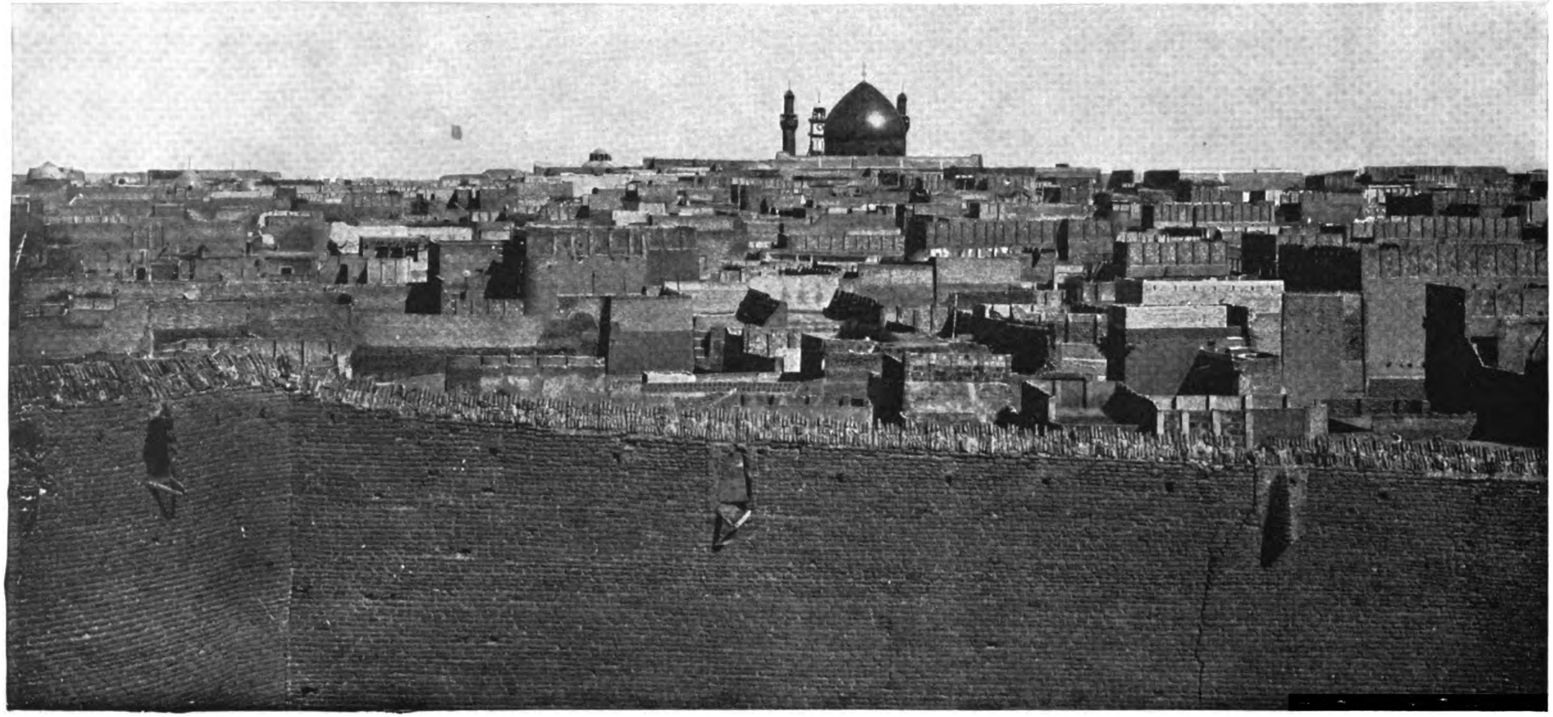


Photo by Frederick Simpich

VIEW OF NEDJEF, SHOWING ITS GOLDEN DOME AND THE FLAT-ROOFED ARAB HOUSES

This picture was taken from the top of an artificial hill outside the walls. The hill was made by material excavated from "serdabs" in Nedjef. Note absence of windows in the houses, which is also characteristic of old Bagdad. In the foreground is the brick wall surrounding the city. "In the eventful centuries since the Shias founded Nedjef—on the spot where a nephew of the Prophet Mohammed was slain—it is estimated that over 25,000,000 Moslems have made the pilgrimage to this mysterious desert city of golden domes, fabulous treasures, and weird rites" (see text, page 589). "More human bodies are buried in the plain outside the walls of Nedjef, it is said, than in any other one spot on earth" (see text, page 597).

mosque, burning in the sun rays; then, as we drew nearer, the high, frowning walls that surround the sacred city came into view (see page 594). It was a gorgeous spectacle, mirage-like vision, as of a mighty city floating in the air. The high, sharp walls shut it off abruptly from the desert, and it seemed a mighty thing apart from the surrounding sea of sand. In a few moments we were passing through the acres of graves outside the walls and soon arrived at the city gate.

The sight of a white man riding into Nedjef upset the guards at the gate very noticeably; they seized the rein of Naomi's donkey, gestured wildly in my direction, and quickly drew a copious flow of potent Arabic profanity from the zaptiehs. These latter worthies, now suddenly become very important, abused the lowly guards to perfection, and demanded that we be conducted immediately to the Kaimakam (a sort of subgoverner). Followed by hundreds of Arabs—as many as could crowd into the plaza about us—we were taken to the Belladieh, where I met the Kaimakam (a Turk). It was now quite dark, and I was pleased to follow the Kaimakam's advice, that we turn in and "see Nedjef" next day.

We spent the night in a fairly comfortable khan, sleeping on its flat mud-roof Moorish fashion. From the housetops about came the dull rattle of tomtoms and the sound of Arab women's voices, singing to the accompaniment of their jangling tambourines. Two captive desert lions, caged on a roof near the khan, roared at intervals during the night, and each time they roared I awakened, startled by the unusual sound.

A FREAK CITY

Nedjef is a freak city. Not a green thing — a plant, shrub, or tree — lives within its dry, hot limits. It is built on a high plain of soft sandstone. The narrow, crooked streets, in many places mere passages 3 or 4 feet wide, wind about like jungle paths. But for the four zaptiehs sent with me as a guard by the friendly Kaimakam, I must soon have lost my way when I set forth to see Nedjef.

For more than an hour we followed these narrow passages that lead through the Arab quarter. The mud-plastered houses were all two stories high and, odd as it sounds, had no windows facing the street. Only a wooden door, massive and bolt-studded, but so low that one must stoop to enter, opened to the street. As we threaded the cramped, crooked paths we came frequently on small Arab children playing before these doorways. Invariably they took one look at me, doubtless the first white man they had seen, and fled screaming through the low doorways. An instant later I would hear the startled voices of women, and then the hurried sliding of the great door bars.

Three or four times, in turning a sharp curve in the warped gloomy street, I came face to face with veiled Arab women. At sight of me through the odd peep-holes in their black veils they whirled about and dashed hastily into the first friendly doorway with many exclamations of surprise. Often, when we had passed a little beyond these women, I heard them burst into shrieks of hysterical laughter.

One of the strange features of this strange city is its cellars. In summer the fierce heat drives the panting people deep down into the earth, like rats in a hole. Beneath every house is a cellar, burrowed mine-like to amazing depths; one I explored reached an astoundingly low level, being more than 100 feet below the street. Down into these damp, dark holes the Shias flee when the scorching desert air sizzles above and imported German thermometers stand at 130 Fahrenheit. Some of the cellars (serdabs) are arranged in a tier of cells or rooms, one below the other; the upper room is used in the first hot months, the family going lower down as the heat increases.

So many of these vast underground retreats have been dug that the excavated material, carried from the city on donkeys' backs and dumped on the desert outside, forms a young mountain over 100 feet high, from the top of which a fine view of the city may be had. I was told that many of these serdabs are connected by means of underground corridors, and that criminals, who swarm in Nedjef, easily elude capture by passing through these tunnels from house to house, finally emerging at a point in the city remote from their place of disappearance.

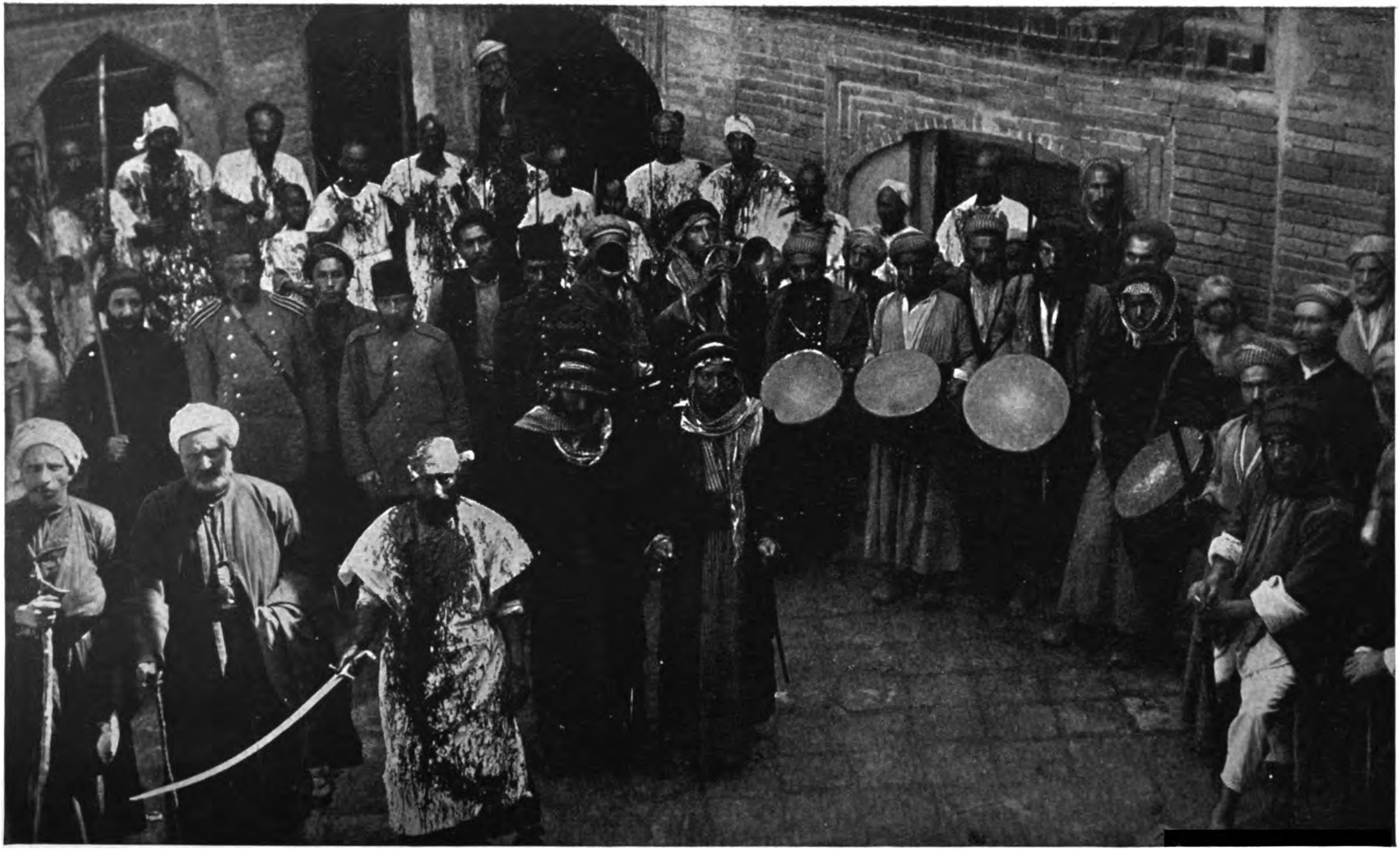


Photo by Frederick Simpich

FURIOUS FANATICS AT NEDJEF

The men with blood on their clothes are the victims of self-inflicted wounds. During the Moharrem feast these fanatics work themselves into a frenzy, gashing their heads and breasts with swords. Some have been known to kill themselves in the heat of religious excitement

In the heart of Nedjef, its great dome visible for miles on the surrounding desert, stands the magnificent mosque of Abbas, the shrine that draws the teeming throng from all the Middle East.

TILES OF GOLD

Turning from the native quarter, we came to the long straight bazaar leading to the mosque. I was struck with the difference in the looks of the Nedjef people and the crowds at Kerbela. Few Persians were about; the folk seemed all Arabs. Many uncouth, swaggering desert men were among them, their long hair, faded dress, and camel sticks, or oversupply of guns and side-arms, marking them as from the wild places. There was a spirit of crude, barbaric primitiveness in the crowd that surged past. The little touches of outside influence one sees at Bagdad, like an occasional European hat or an imported overcoat, were all lacking at Nedjef. Here was old Arabia in original bindings.

The mosque we came on suddenly, for the crowded bazaar street ends in an open plaza before this dazzling structure.

In amazement I gazed on its wonderful façade; golden tiles and fancy silverwork rise above and about the great portal, and across the wide entrance is hung a giant chain of brass, worn smooth and shiny from contact with the millions of turbans, tarbooshes, and keffeyehs which have brushed under it in centuries gone by. This chain is so hung that all who enter the mosque must bow.

Through this open gate, from where we stood, some 20 yards back, I could see the base of the great mosque itself. To my profound surprise, the great gold tiles which cover the dome also run to the very base of the mosque! And on the inside of the walls about the court were more gold tiles. Above the outer portal, too, on the outside, were sprawling Arabic characters 20 inches high, seemingly cut from sheets of gold! What must this barbaric splendor have cost!

The cost of the wonderful temple itself is but a bagatelle compared with the value of the treasure in its vault. For ages, be it known, Indian princes, shahs, and nobles of the Shia faith have made precious gifts to this temple at Nedjef, pouring into it a priceless stream of jewels, gold, and plate. A British Indian army officer told me that the looting of the Nedjef mosque was a favorite dream of soldiers in the Middle East, who looked forward to the day when war may sweep an army of invasion into Nedjef. The true enormity of the treasure at Nedjef was only brought to light in recent years, when the Shah of Persia made the Hahj and the pent-up wealth was revealed to his royal gaze by its zealous official keeper, the "Kilitdar."

But no Christian has ever seen the inner glories of the great mosque of Abbas at Nedjef. The contrast between two faiths is striking: a Moslem walking into a Christian church is made welcome; a Christian who walked into the Moslem mosque at Nedjef would be slain as a defiler; yet both claim the same God!

Lost in admiration of the splendid structure before me, I had failed to note the gathering crowd of Shias who now packed the plaza about us. It was the anxious voice of the zaptieh urging that I move away that finally roused me. In an instant, it seemed, fully 200 people had gathered in the small square before the mosque and were glaring at me and asking why and whence I had come.

One zaptieh, feeling my dignity assailed, foolishly struck or pushed a Shia who had cursed my religion and spat at me. A serious disturbance seemed about to break out, but we managed to slip away through a narrow side passage and thus avoid the crowd. As it was, a hundred or more men and boys followed, nor left off until we passed through the south gate of Nedjef and out onto the desert for safety.

More human bodies are buried in the plain outside the walls of Nedjef, it is said, than in any other one spot on earth. Myriads of fancy tombs, terminating at the top in little blue-tiled domes, rise from the plain. I asked how many might be buried there. "Allah knows all their names," said a zaptieh, simply. And all the millions of pilgrims who have come in ages past with corpses for burial have also brought money to spend. The richer the man who brings the body, the greater the toll taken. Twenty thousand dollars was spent on one funeral.

Burial sites within view of the great mosque bring a high price. The Turks put a tax on every corpse imported from India, Persia, etc. Many bodies are smuggled in. It is told of one astute Persian pilgrim that he divided his grandfather's skeleton and sent it in separate parcels by mail to save freight and tax.

When a death caravan reaches the outskirts of Nedjef, they unpack their gruesome baggage and prepare the various bodies for burial. The crude methods of embalming or mummifying would expose Nedjef to disease were it not for the dry desert air. The very few folk of Nedjef who work for a living make money manufacturing fancy shrouds, stamped with Koranic sentiments, for the burial of corpses brought in by the pilgrims.

Others turn out prayer-bricks ("Torba"), which every Shia uses in his daily prayers. These are made from holy clay, scooped up from the great cemetery and pressed into tiny odd-shaped bricks, and also stamped with an inscription from the Koran. When a Shia prays, he lays this torba on the ground, faces Nedjef, and prostrates himself, touching his forehead against the sacred brick.

Near the mosque in Nedjef lives a colony of what might be called perennial brides; they are legally married many times each year. When a caravan of pilgrims come in from a distant land, the men in the company seek out this colony of professional marrying women. An authorized priest performs a fixed ceremony, and the pilgrim is comfortably settled as a married man during his visit and period of prayer at holy Nedjef.

As crooks prey on the crowds that throng our "world's fairs," so a large criminal element thrives in Nedjef, living off the timid pilgrims. Gamblers, thieves, and sharpers abound, and few pilgrims leave Nedjef with money. Many fall by the wayside and eke out the life of beggars on the streets of Kerbela, Bagdad, etc.

In all of this unnatural city I saw not a tree or shrub; not even a potted plant. It is a dry, prison-like place of somber gray stones and mud-plastered walls. Remove its mosque, its one priceless possession, and Nedjef, with its horde who live on those that come to pray, would perish from the earth. In the 1,200 years of its eventful life, not one useful article has been manufactured within its fanatical precincts.

Yet in all Islam, Shias turn to Nedjef to say their prayers. To Nedjef every good man must make the pilgrimage once in his life, and at Nedjef he hopes to be buried when he dies.

IMPRESSIONS OF ASIATIC TURKEY

By Stephen van Rensselaer Trowbridge

FIVE years' experience in the provinces of Aleppo and Adana are the basis for the impressions recorded in this article. Extensive horseback journeys, covering altogether more than 4,000 miles, have given an excellent opportunity for an intimate study of the Turkish people and of the land itself.

In the provinces the Turks have built no monuments which will abide. Their seven centuries of occupation have served to demolish many stately ruins of ancient architecture; but as for constructive work not even roads and bridges have been built.

Many Americans are prejudiced against the Turks, partly through a vague suspicion of all the Oriental peoples and partly through the scathing denunciations called forth by massacres of Bulgarians and Armenians. Many of these hostile utterances are no doubt echoes of William E. Gladstone's famous invectives, and even in Shakespearean drama we find bitter allusions to the Turks.

But let us remember that the individual Turk possesses many admirable qualities of hospitality, courage, and fidelity. Asia Minor is made up largely of rugged mountain ranges and high, fertile plateaus. In this bracing climate a strong type of physique is developed, as those who have traveled among the Turkish peasants very well know.

Yet it is doubtful if the Turkish nation can stand much longer against the steady and well-planned advance by Germany, Russia, and England for the ultimate occupation of what is left of the Empire. The complete defeat at the hands of the Balkan allies, due very largely to 30 years of political corruption and mismanagement in Constantinople, has broken Turkish prestige in such a way as to invite further territorial dismemberment.

Those ancient plains and valleys which have seen the momentous clash of Asiatic and European armies in the centuries of the past are destined to see still further political changes before their rich resources are claimed for modern science and industrial development.

A HISTORIC COUNTRY

The historic character of the country appeals strongly to the imagination of the traveler. At Jerablus, on the Euphrates, where the new bridge of the Bagdad Railway is to span the half mile of turbid, rushing water, the ruins of Carchemish, the capital of the Hittite Empire, lie buried 15 feet below the Greek and Roman ruins. No less than seven cities have been built upon that site, and each civilization has left its layer of shattered brick and stone. This was once the rich country ravaged by Nebuchadnezzar and Pharaoh Necho.

From the crags of the Amanus Mountains one may look down upon the plain of Issus, bordering the blue Mediterranean, where Alexander the Great so overwhelmingly defeated Darius and forced his way into the coveted realms of the Orient.

West of Issus, in the fertile Cilician plain, is the city of Tarsus, the birthplace of St. Paul. In the Taurus and Amanus Mountains many Armenian fortresses are to be found, recalling the days when Armenian kings ruled from their capital at Sis. In every broad valley and upon every plain are the mysterious Hittite mounds, which shelter the secrets of an almost prehistoric past. The Germans have excavated the mound at Zinjirli and have carried the immense sculptures to the Berlin museum.

Two days' horseback journey southeast from Issus, the outlines of the ancient Antioch, the very city from which Paul and Barnabas set forth upon their first missionary expedition, may be clearly recognized from the crumbling walls which were once able to withstand the most desperate sieges.

Seventy miles to the east of the Euphrates, at the northern end of the Mesopotamian plain, is the citadel of Edessa, the modern Urfa, which for 50 years was valiantly held by the Crusaders. To look down into the yawning moat, cut to a depth of 50 feet in the living rock, gives one a sense of the enormous difficulty of storming those ancient castles. Baldwin captured the fortress in 1098, but eventually the Saracens, under Zangi, drove the Crusaders forth and reclaimed the stronghold for Islam.

Aleppo, now a prosperous city of over 200,000 population, is famous as the capital of Salah-ed-din (the Saladin of Crusader history), whose mighty fortress stands to this day. From that point the Saracen monarch directed his conquests of northern Syria, and marched southward to do battle with Richard Cœur-de-Lion (see page 600).

The persistent influence of the Crusades may be realized from the fact that as late as 1638 the Knights of St. John occupied the western hill of the city of Aintab against the assaults of the Turks. When the excavations for the building of an American Girls' School were being made about eight years ago, a kettle full of silver coins was dug up. The coins are of the early seventeenth century and were evidently buried by the Knights of St. John—perhaps in their last stand against the followers of Mohammed.

Roman coins and bits of Grecian pottery are frequently dug up by Turkish plowmen or are washed to the surface by the torrent of some sudden rain. Along the limestone cliffs of the Euphrates are seen the ruins of Greek aqueducts which were in full operation in the

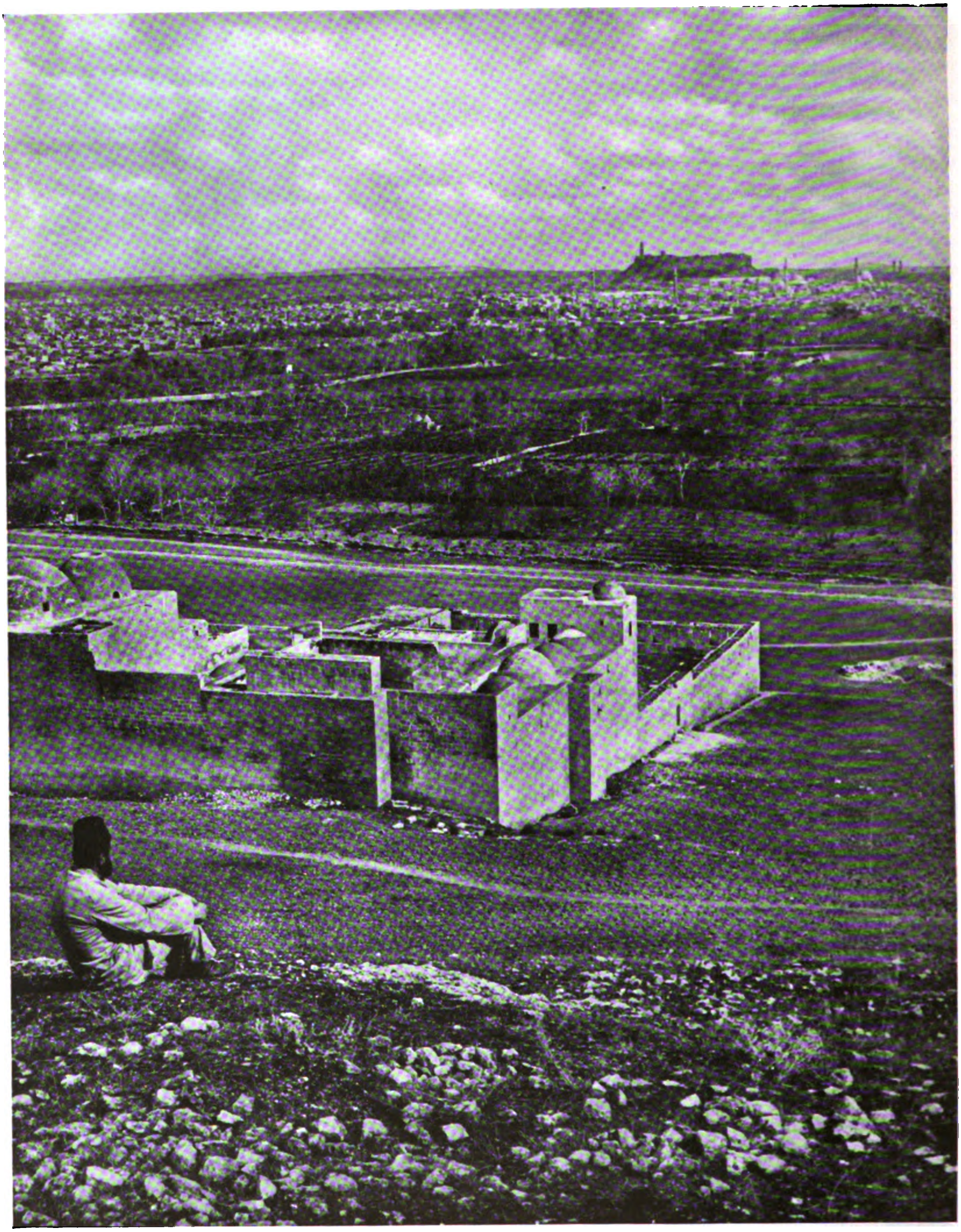


Photo and copyright by Underwood & Underwood

A VIEW OF PICTURESQUE ALEPPO AND ITS FAMOUS GARDENS

"Aleppo, now a prosperous city of over 200,000 population, is famous as the capital of Salah-ed-din (the Saladin of Crusader history), whose mighty fortress stands to this day. From that point the Saracen monarch directed his conquests of northern Syria, and marched southward to do battle with Richard Cœur-de-Lion" (see text, page 599).

days when Lucian of Samosata wrote his comedies and satires.

WONDERFUL CEDAR FORESTS

Upon the northern border of these provinces of Adana and Aleppo the main range of the Taurus breaks the horizon, with its rugged, snow-capped peaks, whose altitude is from 7,000 to 10,000 feet. This great backbone of mountains runs east and west, curving at the western end southward to the Mediterranean and extending eastward into the highlands of Kurdistan. North and south from the city of Marash to the sea runs the Amanus range, whose peaks are from 5,000 to 7,000 feet in height.

It was from these cedar forests that the pillars for many of the Babylonian temples were hewn. The immense logs had to be carried over a rough, hill country fully 100 miles before they could be rolled into the waters of the Euphrates to be floated down to their destination.

The eastern or landward slopes of the Amanus range are entirely deforested; but on the seaward side, owing to the mists and moisture, the fresh growths have been rapid and many of the forests are very dense. The difficulties of transportation are so great that when the majestic cedars and pines are felled the trunks are often left to rot, while the tops and branches are loaded on mules and carried down the rough trails. The cedars are of the species *Cedrus libani,* and are far more plentiful than in the Lebanon range.

From the stumps of certain cedars recently cut down in the Taurus it is evident that the larger trees are from 300 to 500 years old. The height ranges from 50 to 80 feet and the girths are often over 20 feet. The cedars grow higher up the mountain side than any other trees. Near them are the balsams, a balsam and a cedar often growing up very close together. On the Amanus range oaks and beeches are found in abundance, the beeches at an altitude of 4,000 feet and the oaks somewhat lower down.

Mistletoe grows plentifully on the oaks and the balsams, but no romantic senisments stir the hearts of the mountaineers. The shepherd girls climb the trees and tear off the clusters to feed them to their flocks of goats!

The Turkish government has had a Bureau of Forestry for years past, but corruption and idleness and lack of scientific training have combined to produce nothing except wasteful expense for salaries.

The shortage of forests partly accounts for the exorbitant prices paid for lumber all through Asia Minor and for the cost of charcoal, which ranges from $20 to $40 a ton. The laborious caravan transportation over desperately difficult trails also affects the cost of fuel and lumber. During a prolonged snow-storm in the Aleppo province, in 1911, charcoal reached the price of $100 a ton, and bituminous coal from England was on the market in Aleppo at very high rates.

Another harmful effect of the denuding of the mountains is seen in the wild torrents that sweep down in early spring through the hill country to the Euphrates. Rapidly melting snow and heavy rainfall are the natural causes. It is difficult to conceive of the suddenness of these floods. Caravans encamped near a dry river-bed have more than once been swept to destruction. And sometimes travelers while peacefully crossing a stream will find the water rising so rapidly around them as to carry the horses off their feet and endanger the lives of all.

Certain torrents are known by famous accidents which have thus occurred. "The drowner-of-the-bride and "The sieve-maker's torrent" are two that are greatly dreaded.

I have found on the bank of a certain swift stream caravans that had accumulated for 22 days, no one daring to cross. Bridges are found only on the main military routes, and even those bridges are in wretched repair. The Euphrates gathers up the waters of that vast region and sweeps away to the Persian Gulf at the rate of five miles an hour. During the April and May floods, due to the melting snows of Armenia, the river spreads out to a width of over half a mile, even as far north as Carchemish. This makes the crossing in the antiquated ferry-boats very difficult indeed.

The mountain scenery is majestic and

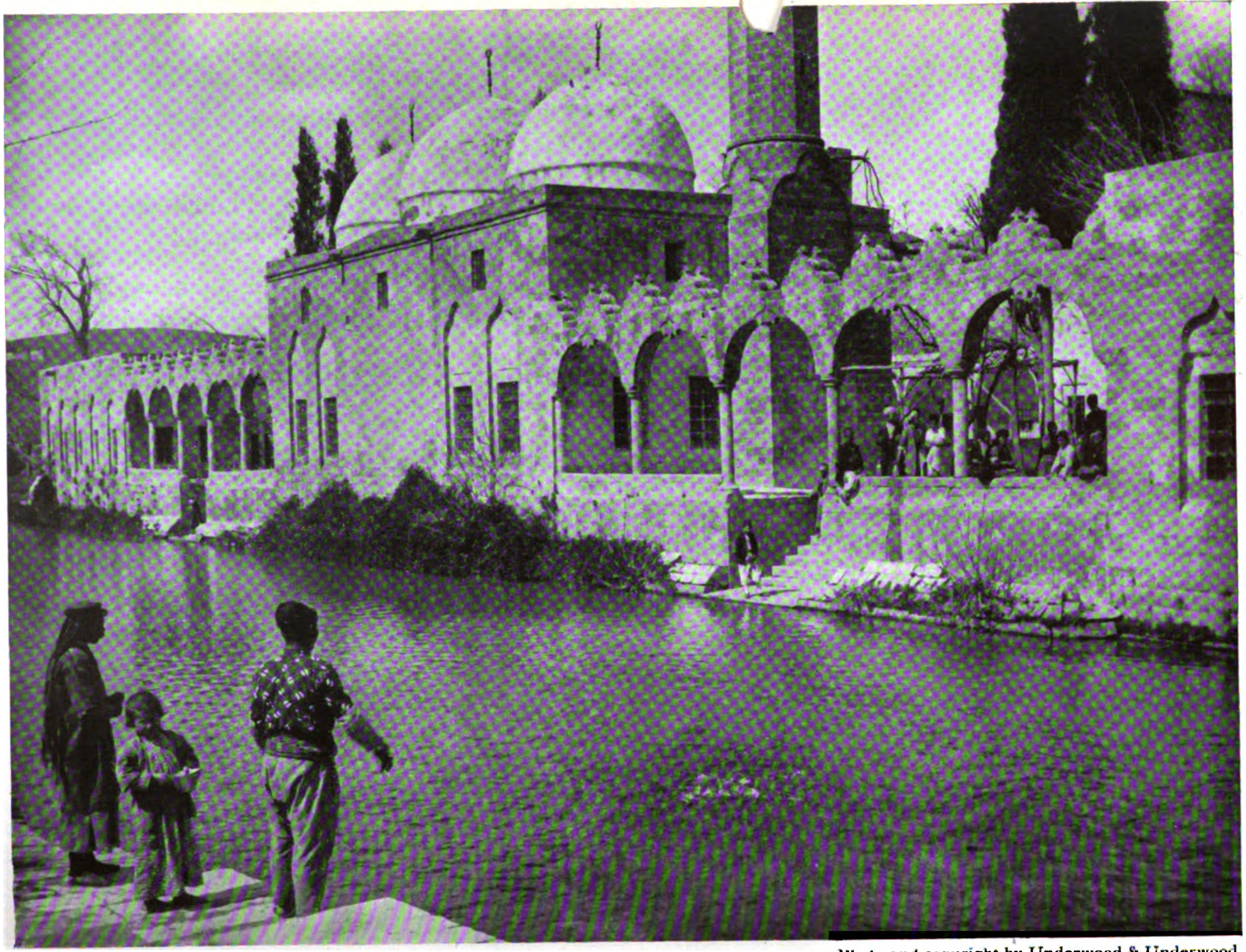


Photo and copyright by Underwood & Underwood

MOSQUE OF ABRAHAM AND POOL OF SACRED FISH: URFA, MESOPOTAMIA

"Seventy miles to the east of the Euphrates, at the northern end of the Mesopotamian plain, is the citadel of Edessa, the modern Urfa, which for 50 years was valiantly held by the Crusaders. To look down into the yawning moat, cut to a depth of 50 feet in the living rock, gives one a sense of the enormous difficulty of storming those ancient castles" (see text, page 599).

inspiring. I have seen while riding in the Adana plain at daybreak 15 snow-white peaks light up with the delicate tints of dawn. The atmospheric effects of early morning and sunset are entirely unique. Rich tints of purple, blue, and rose hover above the horizon at those mystic hours.

Riding out over the Mesopotamian plain in the heat of summer, I have watched with wonder the phenomenon of the mirage. Beautiful groves of trees of shimmering brightness and grace stand forth on the level horizon; but when some new angle of vision is reached the fair scene grows hazy and vanishes. Again I have seen the distant part of the plain transformed into a vast lake, with many wooded islands. At such times it is almost impossible to believe that the plain has no such beauties, but is in reality a dull, level brown, with clustered villages, monotonously similar and colorless.

The mineral resources of that part of Turkey are as yet undiscovered; but it is known that there are rich copper veins in several parts of the Taurus and in the hills near Diarbekr. Coal has been found in ledges near the surface and extending many miles not far from Aintab and Behesne. Near Bagdad oil fields have been discovered. The Karamanian range west of Adana contains vast amounts of iron ore. Given an intelligent and liberal government, these natural resources will attract the attention of engineers and investors from all over the world.

Out in the plain of Haran, where Abraham sojourned, the surveyors have driven their stakes for the "iron road" within eight or ten paces of the well which by ancient tradition of the Arab tribes is the very well where Rebecca watered the camels at eventide. Soon the freight trains will be rushing by and the camel caravans will be forced farther back into the desert.

The Arabs of the plain are perhaps the most primitive of all the inhabitants of Turkey.

I have seen a group of Arab men divide and devour a large watermelon and toss the rinds out into the dust of the village street. They were not thrown aside for the donkeys and camels, for by and by the women and children came skulking up, gathered the gritty rinds, and ate them with avidity! Probably not more than 1 per cent of these Arabs can read. The village dwellings are adobe huts, but the nomads live under goats'-hair tents the year round.

It is here in the north Arabian plain that the finest horses in the world are raised. Every year buyers from Bombay and Cairo come to the Aneyzeh and Shammar tribes to secure polo and riding horses of the purest breeds. These horses, when exported to northern and western countries, do not stand the cold, damp climates.

DIFFICULTIES OF TRAVEL

Journeys are usually made on horseback in these provinces, though the larger cities are all connected by a system of wagon roads. The roads get into such hopeless condition that it is no strange sight to see five or six Aleppo carriages up to the hubs in mire, the passengers all having abandoned them by wading through the stickiest kind of mud, fervently wishing that they had had sense enough to start out on horseback.

A good riding horse will get through anything except quagmire and quicksand; but the exposure of riding ten or twelve hours a day in the saddle makes traveling extremely difficult for aged people and those of delicate health. The heat of the sun in summer is so intense that the journey is very exhausting. Horseflies, mosquitoes, and the dirty conditions of wayside inns detract from the romance of life in the saddle.

But the unfailing hospitality of the people, welcoming the traveler, no matter of what race or religion, to any house in any village, compensates for many of the inconveniences and hardships of village life.

When journeying by caravan, there is a continual din at night and sleep is well-nigh impossible; for whether in an inn or in an open camp the pack-horses and mules carry great bronze bells around their necks which jangle resonantly as the animals move to and fro. The best way is to travel with little baggage, as the Turks usually do, and accept the hospitality of the chief's house, where the guests may number a dozen or more any night of the year.

After sunset a tray is placed on a low stool and a steaming dish of crushed wheat, with onions or peppers and bread in abundance, is set down in the midst. The Moslems exclaim in Arabic, "In the name of God, the compassionate and merciful," and fall to with earnestness; for the evening meal is the mainstay of the day.

As soon as the tray is cleared away by the women of the household prayer rugs are spread, and with one accord the men bow low toward the Kaabah and repeat the Arabic formula of prayer. Nothing is more impressive all through the Orient than the rhythm and devotion of this simple Mohammedan ceremonial, performed as faithfully in the mud hut of the desert as upon the marble pavement of a Constantinople palace.

Great numbers of the poorer people travel on foot. Still others are able to enjoy the luxury of mounting a donkey, thus covering the weary miles of the plain. The freight is carried by caravans of mules or camels; to some extent by heavy, clumsy wagons drawn by horses.

MOST PRIMITIVE AGRICULTURE

Wheat is the staple product of Turkey. Bread is the staff of life for the millions of the poor. Barley is extensively raised to provide for the large number of horses throughout the country. During the past quarter century cotton has been planted in the Adana plain and thus a new industry is rapidly developing. Experts state that the Mesopotamian plain, when properly irrigated, will produce a substantial share of the world's cotton crop.

The climatic conditions are also favorable for the production of silk. Mulberry trees are cultivated in the region of Antioch. It is upon the mulberry leaves that the silk-worms are fed. The raw silk is exported to France, although a few mills at Damascus and Antioch are now established. The largest silk industry is in northern Asia Minor, at Brusa.

Olive oil is also exported in considerable amount and is of local importance in the manufacture of soap. The ripe, black olives are a wholesome staple food and are as different from our bottled olives as ripe plums are from green ones.

Fruit trees are planted near all the towns and yield plentifully if carefully watered. Nowhere can more delicious figs and pomegranates be found; and the grapes of Central Turkey are famous. The grape season lasts into the late autumn and the yield is abundant. A considerable part of the vintage is made into a kind of molasses by boiling and beating the grape juice.

In farming the most primitive implements are used. The little wooden ploughs do not pierce more than four or five inches into the ground; and the patriarchal methods of threshing and winnowing are still practiced. The stalks of wheat are spread over the threshing floor a foot deep; then the oxen drag a wooden sledge, set underneath with sharp flintstones, around and around over the wheat until the stalks and ears are thoroughly cut to pieces.

Then the hand labor commences if there is a propitious breeze. With the broad fan the wheat is tossed into the air, the chaff is carried away by the wind and the grain falls back upon the ground. Very little farm machinery has been imported, partly because of its cost and the difficulty of making repairs in a country where mechanics is an unknown trade and partly because labor is so very cheap. A laboring man's wage is from 10 to 30 cents a day.

A very small percentage of the farmers own their farms. Most of the holdings are in the hands of rich city lords, who employ overseers and practice all manner of oppression and extortion. In this way whole villages are bought and sold, the taxes being farmed out by the government to the highest bidder.

The government tax on all cereals is one-eighth of the harvest. Upon flocks and herds the rate is about the same. In many districts another eighth has to be sacrificed to the rapacity of the tax-collector, so the harvest is sadly shrunk and often has become mildewed before the obnoxious "publican" withdraws to the city.

Potatoes are almost unknown in Turkey and meat is eaten very little. The

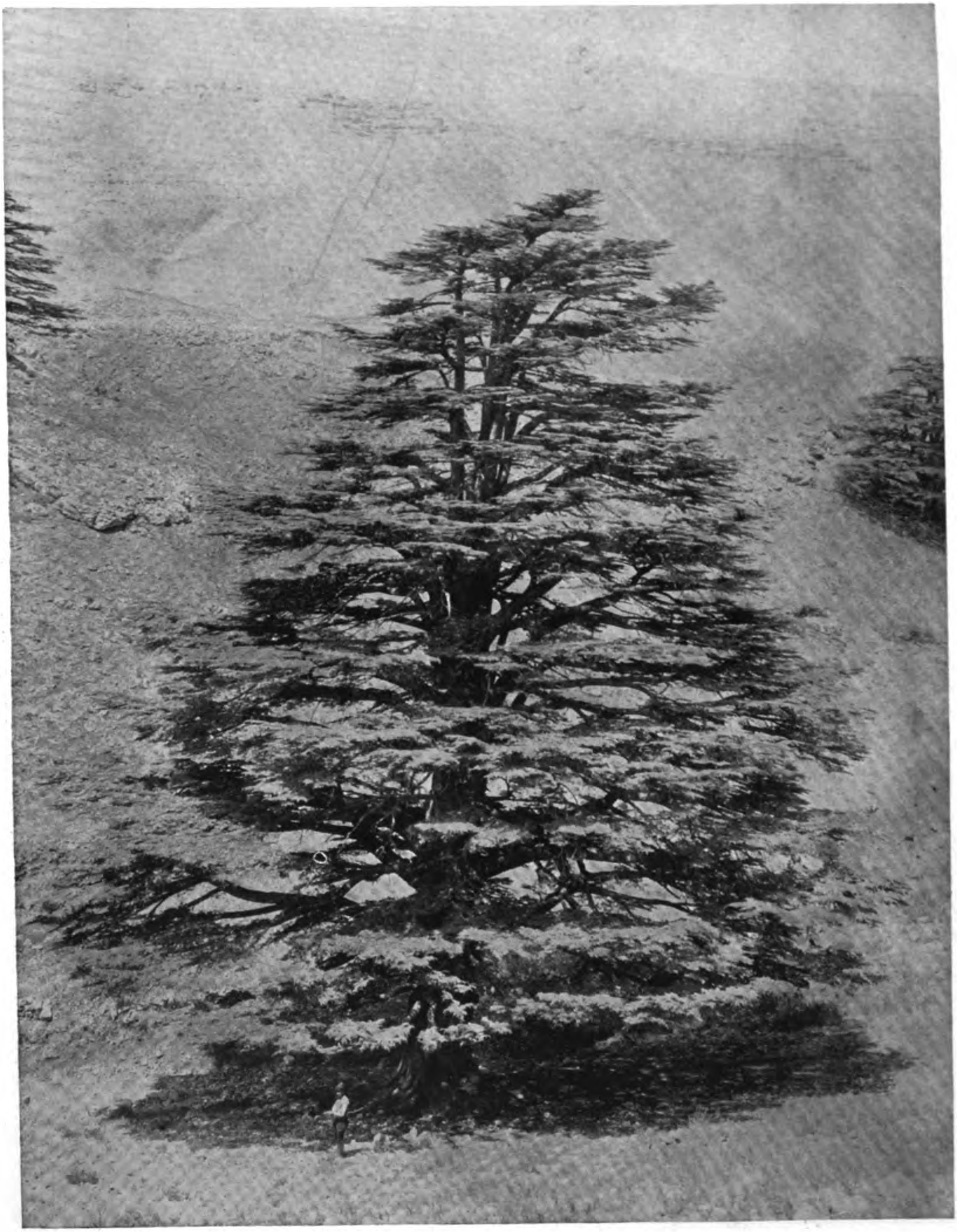
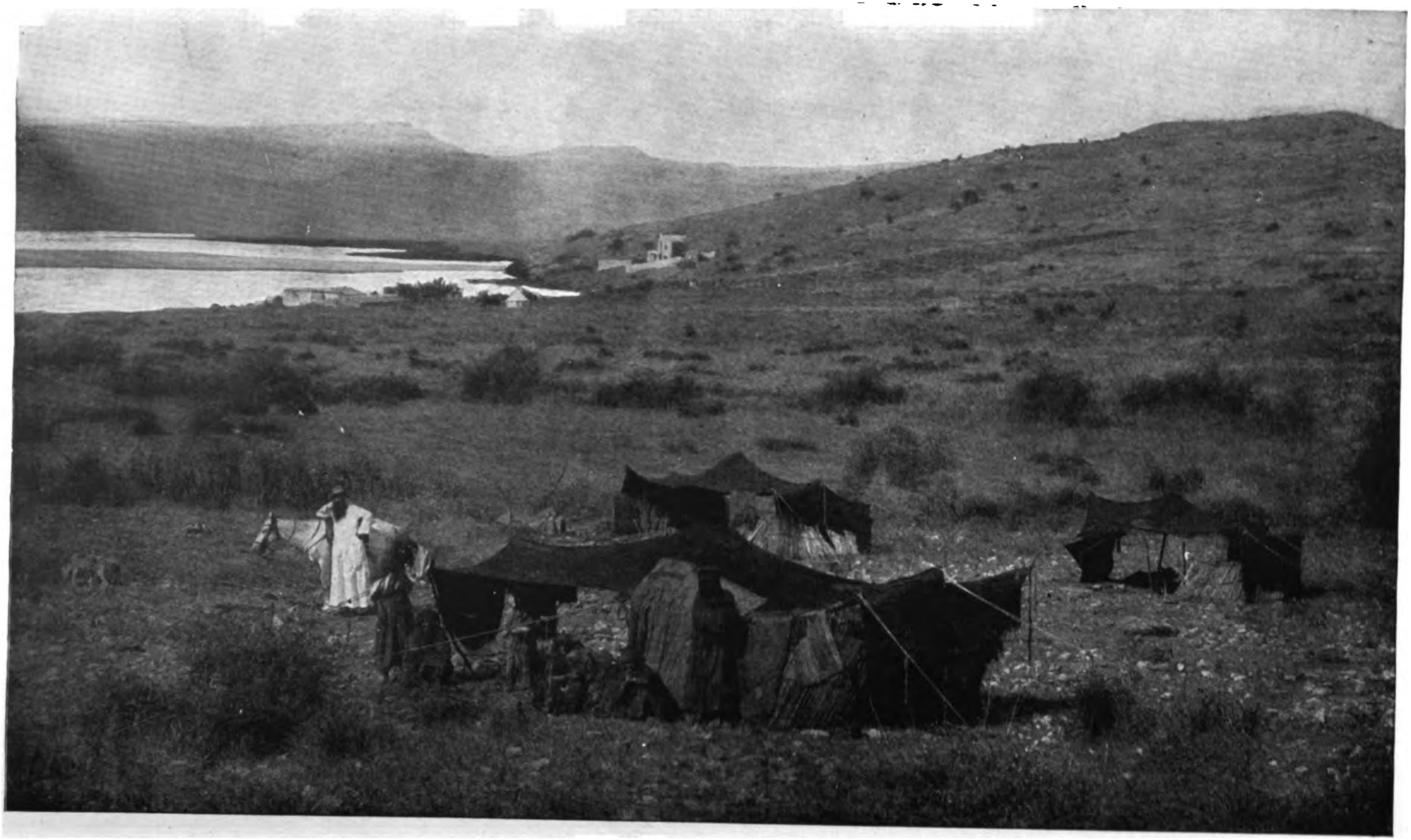


Photo by American Colony, Jerusalem

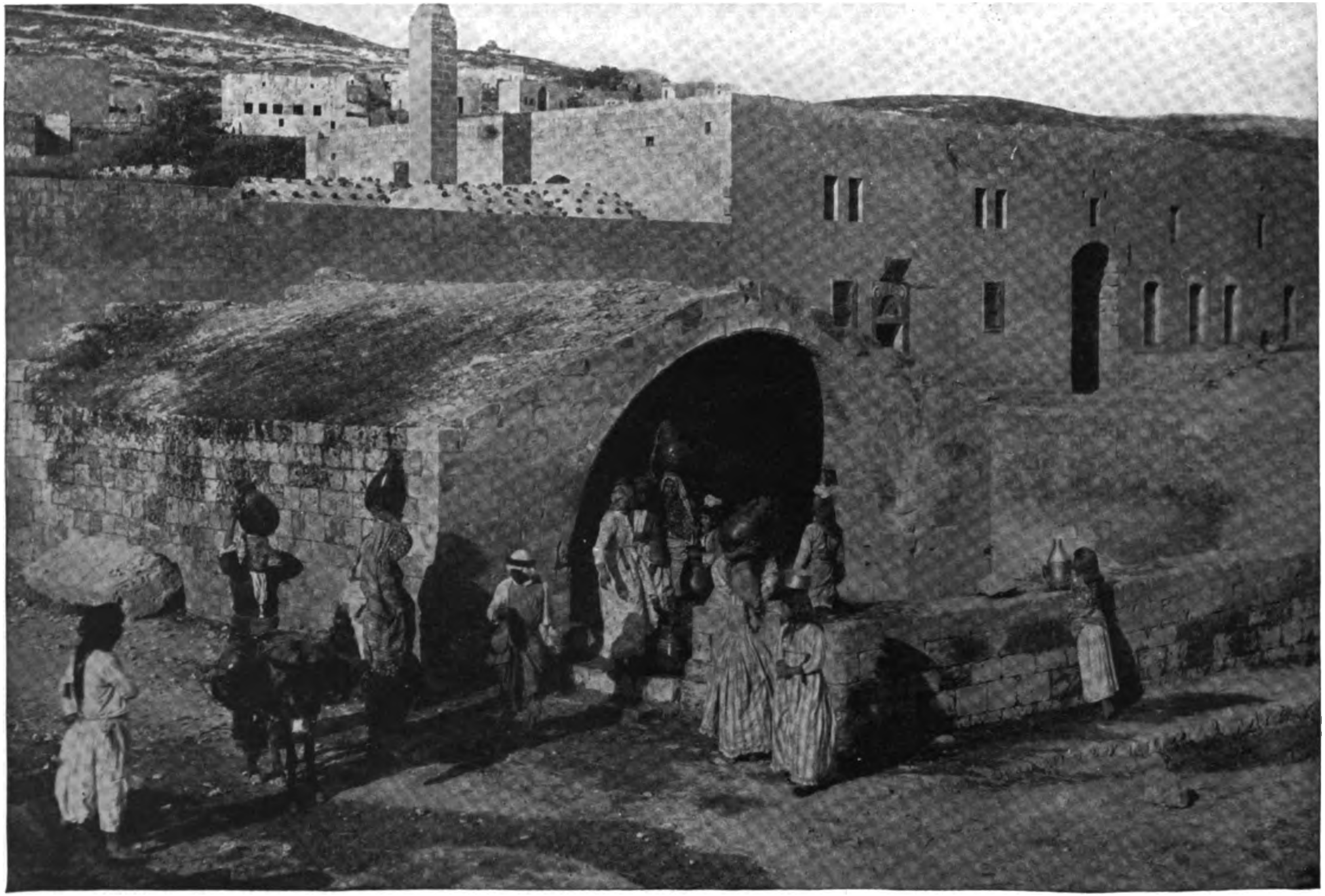
A CEDAR OF LEBANON

"It was from these cedar forests that the pillars for many of the Babylonian temples were hewn. The immense logs had to be carried over a rough, hill country fully 100 miles before they could be rolled into the waters of the Euphrates to be floated down to their destination. . . . From the stumps of certain cedars recently cut down in the Taurus it is evident that the larger trees are from 300 to 500 years old. The height ranges from 50 to 80 feet and the girths are often over 20 feet" (see text, page 601).



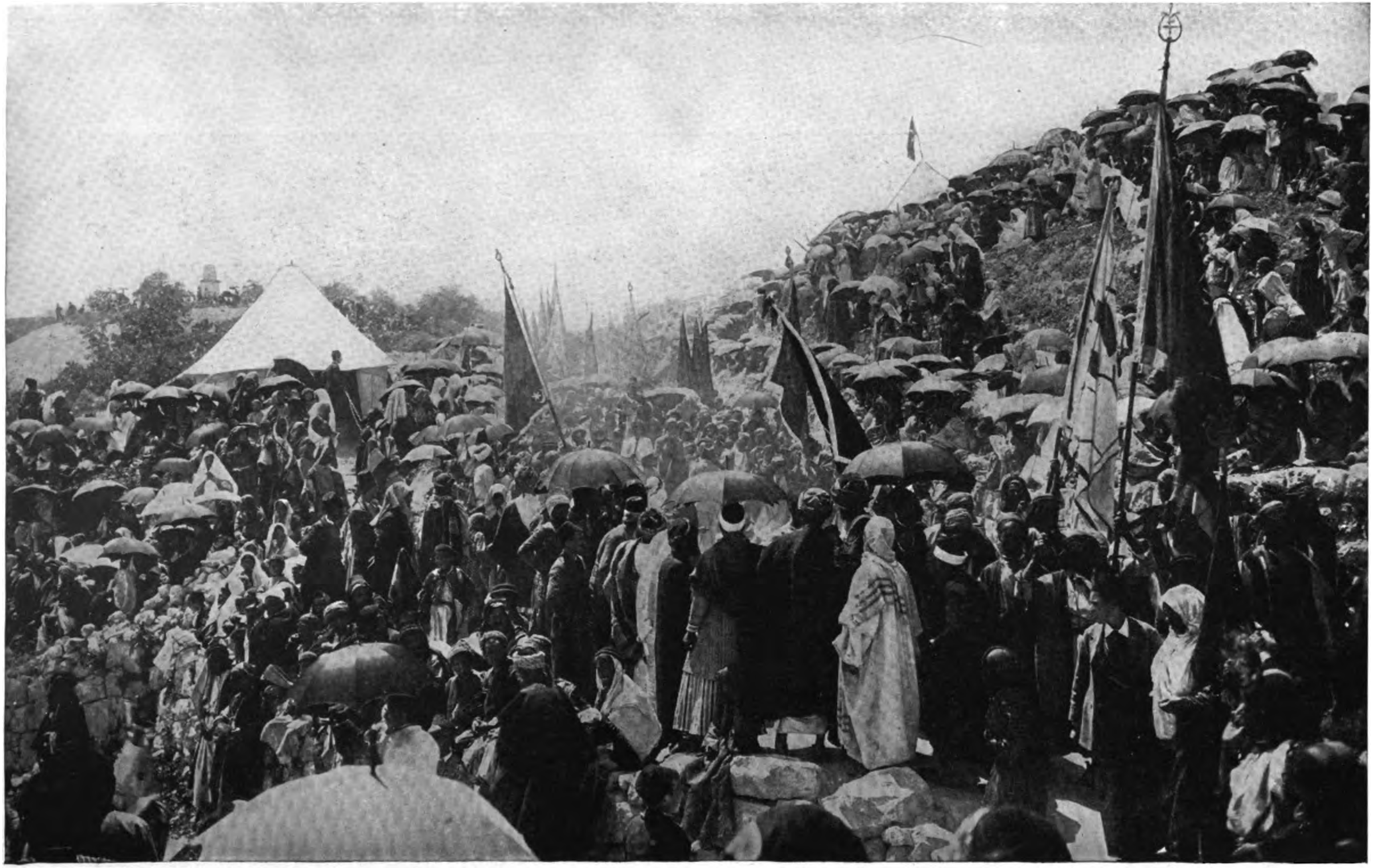
THE SEA OF GALILEE

Bare and drab are the hills that surround the little sea where the faith of Peter was tested. The sea is, in point of fact, a small lake thirteen miles long and seven miles broad, the surface of whose waters is seven hundred feet lower than the Mediterranean. In the time of Christ the shore was a continuous garden, with several cities and villages, and was a noted summer resort. The Galileans were looked upon by the Southern Jews as an ignorant and rustic folk. At the same time they were, from the religious point of view, the most liberal-minded people of Palestine.



DOWN BY THE WELL: JERUSALEM

Nowhere is the "unchanging East" less given to change than in its water supply. The same wells to which women went in the days that the Saviour encountered the woman who wondered how it was that he, being a Jew, would speak to her, seeing that the Jews and the Samaritans had no dealings together, are still there, and the same type of bottles are filled now that were filled then.



THE MUSSULMAN FEAST OF THE PASSOVER

Photo by C. L. Aab

Note the mad man dancing. He wears himself out, throwing his head forward and backward until he is completely exhausted, and it often kills him. If he dies he becomes a wali, and his memory is respected and sacrifices are offered on his tomb. The banners belong to the heads of tribes, called sheiks or imams. The street through which the procession is moving leads down from the Mosque of Omar, through St. Stephen's Gate, and up the road to Bethany, passing by the Garden of Gethsemane.

Mohammedans detest any form of pig's meat, because it is so emphatically declared unclean in the Quran.

It is not the province of this article to describe what Americans have done in Turkey. But travelers who have ventured away from the usual track of the tourists have been astonished to find everywhere high schools, colleges, hospitals, industrial plants, and churches established under the leadership of the American missionaries and manifestly influencing the whole life of the community.

American manufactures are also beginning to find a market throughout that country. Sewing-machines, aëromotors, gas-engines, and farm machinery no longer excite the curiosity which they once aroused. An American automobile has traveled from Aleppo to Bagdad in 57 hours' running time, excluding the 20 hours spent in getting across the Euphrates on a raft. The government mail makes the same trip in 13 days and an ordinary caravan in 21. This shows the possibility of transit when once a reliable and modern government is in control.

FINAL ESTIMATE OF THE TURK

Although still in the dark ages as regards science, although under the handicap of a religion which runs athwart all our modern civilization, although well-nigh ruined by the vicious despotism of "the Red Sultan," Abdul-Hamid; although fanatical and ruthless toward his Armenian and Syrian subjects, yet it is my strong conviction that the Turk has in him good material for manhood. The qualities of fortitude and friendship are not lacking.

The consciousness of God is in his heart wherever he goes and whatever he does. It is not, of course, the Christian ideal of God, but the instinct is there, strong and persistent. Among the peasants especially there is a Spartan spirit of endurance which commands admiration. If we could only understand the soul of the Turk, I am sure we should find that intrinsic worth which has been implanted in human nature by Him who has made of one blood all nations of the earth.

During the massacre of 1895 in the city of Aintab, a Turkish neighbor by the name of Haji Agha came across the street and stood in the gateway of the American hospital, ordering back the mob of Moslem rioters and assuring them that if they attempted to assault that gateway it would be over his own body. His fidelity and his courage saved the day.

HENRY GANNETT

AT THE meeting of the Board of Managers of the National Geographic Society held Wednesday December 16, 1914, it was moved and unanimously adopted that the following resolution be spread on the minutes of the Society and published in the NATIONAL GEOGRAPHIC MAGAZINE:

"The National Geographic Society has lost its honored President, Henry Gannett, through his death on November 5, 1914, after a devoted service to this Society covering the whole period of its existence.

"In his death the Society has lost one of its most enthusiastic supporters and one of its wisest counsellors. He was one of the six men who organized the Society, becoming its first Secretary, then its Treasurer, then its Vice-President, and finally, in 1909, its President, an office he filled with honor to himself and credit to the Society to the day of his death. From the day of the Society's founding he was also a member of the Board of Managers, and for the last ten years of his life headed its Committee on Research.

"In his death geographic science has lost one of its richest contributors. He was in large measure the father of Government map-making in the United States. As Chief Geographer of the United States Geological Survey for many years; as Assistant Director of the Philippine Census; as Assistant Director of the Cuban Census; as Geographer of the 10th, 11th, and 12th censuses of the United States; as Statistician of the National Conservation Commission, and as Chairman of the United States Geographic Board, his contributions to geographic knowledge were of inestimable value.

"We feel deeply the great loss our Society has sustained in Mr. Gannett's death, and extend to the members of his family our own as well as the Society's profound sympathy.

"We have lost a valued friend, the community a most useful citizen, his family a devoted husband and father, and the cause of geographic science one who labored in its behalf with unflagging zeal, with unremitting energy, and with unusual success."

For more than a third of a century Dr. Gannett had been one of the leading figures in the scientific activities of the United States Government, at the same time playing a most important rôle in related affairs outside of the Federal service. He was practically the father of Government map-making in the United States, the chief figure in the work of standardizing geographic names in America, and the author of our present system of statistical charting in connection with the National Censuses.

Dr. Gannett was born in Maine, August 24, 1846, the son of Michael Farley and Mary Church Gannett. He came of rugged Anglo-Saxon stock, and, as soon as he reached the age where he could think for himself, decided to make engineering his life work. When 23 years of age he took the Bachelor of Science degree at Lawrence Scientific School, Harvard University. This degree, at that time, corresponded to the present degree of Civil Engineer. The next year, in 1870, he took the degree of Mining Engineer at Hooper Mining School, Harvard University. Following his graduation he became assistant at the Harvard Astronomical Observatory, accompanying Professor Pickering to Spain in 1871 to observe the total eclipse of the sun that year.

Upon his return from Spain two positions in the scientific world were tendered him — that of astronomer in the Hall North Polar Expedition and that of topographer on the staff of Dr. F. V. Hayden, for the United States Geological and Geographic Survey of the Territories. He chose Government survey work rather than Polar exploration as the field of his activities, and was appointed topographer to the Western Division of the Hayden Survey, serving in that capacity until it was merged into the newly created United States Geological Survey.

It was hazardous work and appealed to the adventurous spirit. It carried the hardy young engineer into regions where the foot of white men had never before trod; across mountain passes and torrential rivers; among wild Indian tribes, often on the war-path.

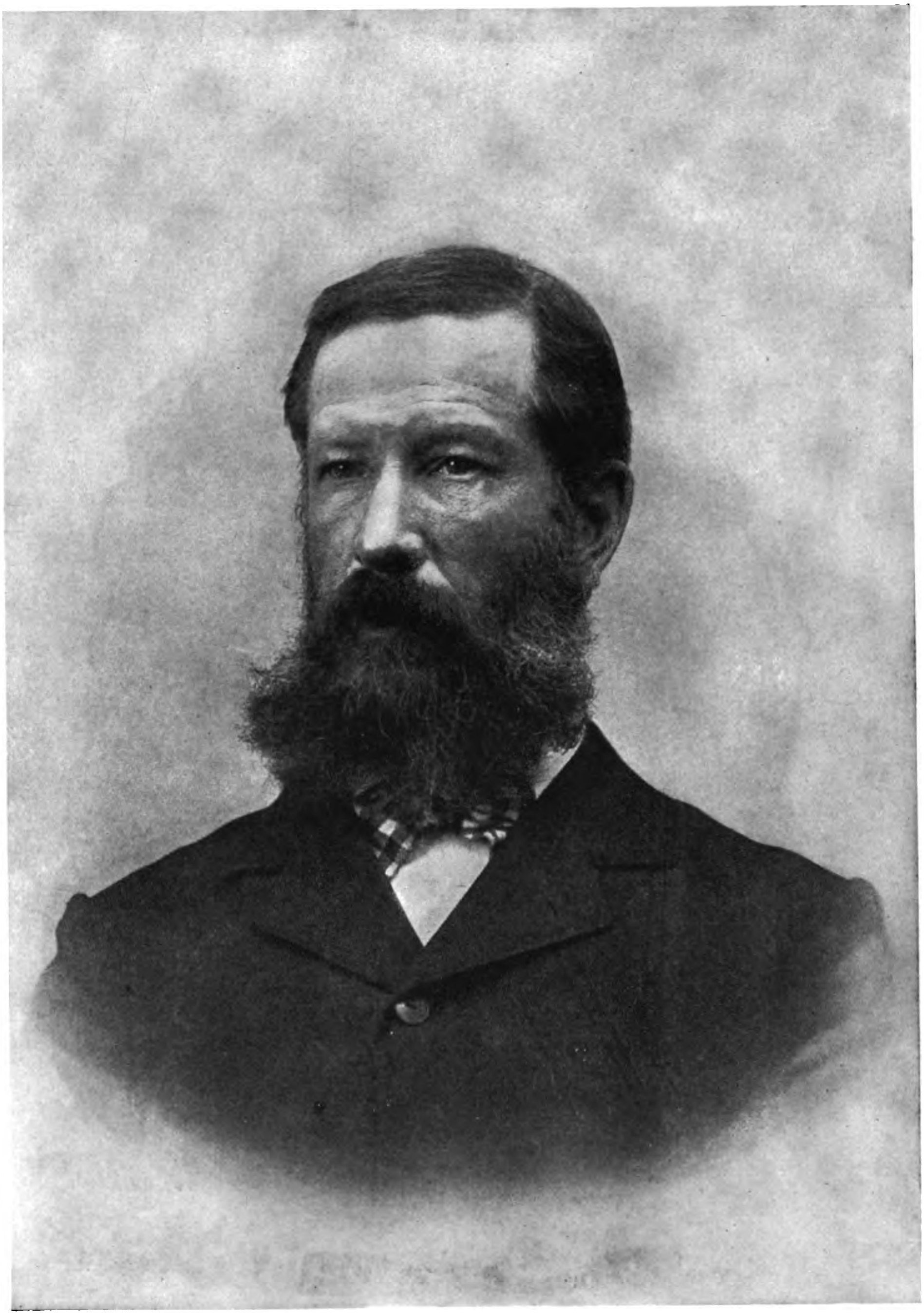
He became a pioneer explorer and topographer of great sections, more particularly Colorado and Wyoming, of the vast empire which the Louisiana Purchase added to our national domain. It was a region filled with geologic wonders and unmeasurable industrial possibilities, which appealed equally to the imagination and the practical turn of the young engineer's mind.

He discovered and christened many a mountain peak and hidden lake and was one of the first to ascend Mt. Whitney, the highest peak in the United States outside of Alaska.

In 1879 the United States Census needed the services of an experienced geographer, and the Geological Survey was asked to detail him for that work. As geographer of the Tenth Census, he laid out nearly 2,000 enumeration districts with such definiteness that each census enumerator for the first time knew in advance the metes and bounds of his district. This system is in force to the present day. The statistical atlas he created for the Tenth Census marked a new epoch in statistical cartography.

When his services with the Tenth Census ended, Mr. Gannett returned to the Geological Survey, in 1882, which was then headed by Major J. W. Powell, the intrepid geologist. Director Powell promptly made him the Chief Geographer of the Survey.

As Chief Geographer, Dr. Gannett de-



HENRY GANNETT

President of the National Geographic Society, 1910–1914

termined the principles upon which the surveys have since been carried on. He selected the sections to be surveyed and the points of departure; organized and instructed the parties sent into the field; visited them and inspected their work from summer to summer; supervised the conversion of their field notes into the topographical maps of which he designed the plan. Thus it was that he came to be called "the father of American map-making." The system of topography he built up is recognized in other countries as the equal of any in existence, and remains practically unchanged, except as changing local conditions and new geological developments require that new maps shall supersede the earlier. His work commanded such universal approval that before very long new legislation extended the topographical survey from the public domain, to which it was limited when the Geological Survey was organized, to the entire United States.

During his career as Chief Geographer more territory was mapped by the Government of the United States, under his direct supervision, than was ever mapped before in the same length of time under the supervision of any one man.

Dr. Gannett served as geographer of the censuses of 1890 and 1900, the while continuing as Chief Geographer of the U. S. Geological Survey. In 1904 it became necessary to secure a census of the Philippines. This census was directed by the military, but Dr. Gannett was asked to take charge of its statistical activities. The results of that census are published in four volumes, large parts of which stand as a monument to the zeal and devotion of the subject of this sketch.

He was also in charge of the statistical work in the censuses of Cuba and Porto Rico. He was Geographer of the United States Conservation Commission and one of the pioneers in the forest preservation movement in the United States. His sympathetic interest and wise counsel were always to be counted on and were freely given while these important policies were taking shape.

The United States Board of Geographic Names, now the U. S. Geographic Board, affords another illustration of Dr. Gannett's skillful adaptation of the science of geography to the purposes of government. It was originally an unofficial organization, brought together by Dr. Gannett and Dr. T. C. Mendenhall, of the Coast Survey, and composed of ten governmental geographers, keenly sensitive to the confusion and contradiction in geographic names constantly appearing in governmental publications. They convinced President Harrison that their work should be officially confirmed. He issued an executive order, dated September 4, 1890, constituting the Board and directing that all unsettled questions concerning geographic nomenclature and orthography, particularly upon the maps and charts of the government, be first referred to the Board, and its decisions accepted as the standard authority. Dr. Mendenhall was named as chairman, and served until he left Washington, in 1894, when Dr. Gannett succeeded him, serving as chairman of the Board for twenty years.

When this Board was created, new counties and towns were being founded in the great West with an amazing rapidity. They were often christened on the spur of the moment, often in keeping with some individual caprice. The result was a rapidly increasing hodgepodge of geographical nomenclature. The Board found hundreds of instances where the name of the post-office did not conform to the name given by local usage to the town in which the post-office was situated. Many instances were found where the same name had been given to two or more towns in the same State. Up to the time of its last report the Board had decided 5,133 such cases. The rules outlined by the Board to govern its policy are simple, sensible, and conservative. They follow in the main the similar rules of boards and national geographic societies of Europe working for unification of geographic names in their several countries. This is one of the many ways in which geographic science promotes world civilization. Dr. Gannett did more work in this field than any other American.

Mr. Gannett was a voluminous writer on geographical, statistical, and inter-related subjects and did much to enrich the geographical literature of the world. The Government archives contain a large number of reports in connection with his work as a topographer of the Hayden Survey and Geographer of the Geological Survey; a very large amount of material in connection with the three decennial Federal censuses and the censuses of our Insular possessions and Cuba, and many special reports on special topics. He made constant contributions to scientific magazines and societies, and for 30 years was a contributor to most of the standard encyclopedias published during that period. He was the author of several books which held a prominent place in geographical and statistical sciences. Among these are his "Manual of Topographical Surveys," his "Dictionary of Altitudes," and his "Commercial Geography." In 1905 he published "The Building of a Nation," and in 1898 his "United States" was published in London as Volume II of "Stanford's Compendium of Geography and Travel."

Dr. Gannett received the degree of LL. D. from Bowdoin College in 1899, in recognition of his service to geographic science. He was a corresponding member of the Royal Geographical Society, of the Scottish Society of Geographers, of the Geographical Society of France, and was the Secretary of the Eighth International Geographic Congress, held at Washington in 1904.

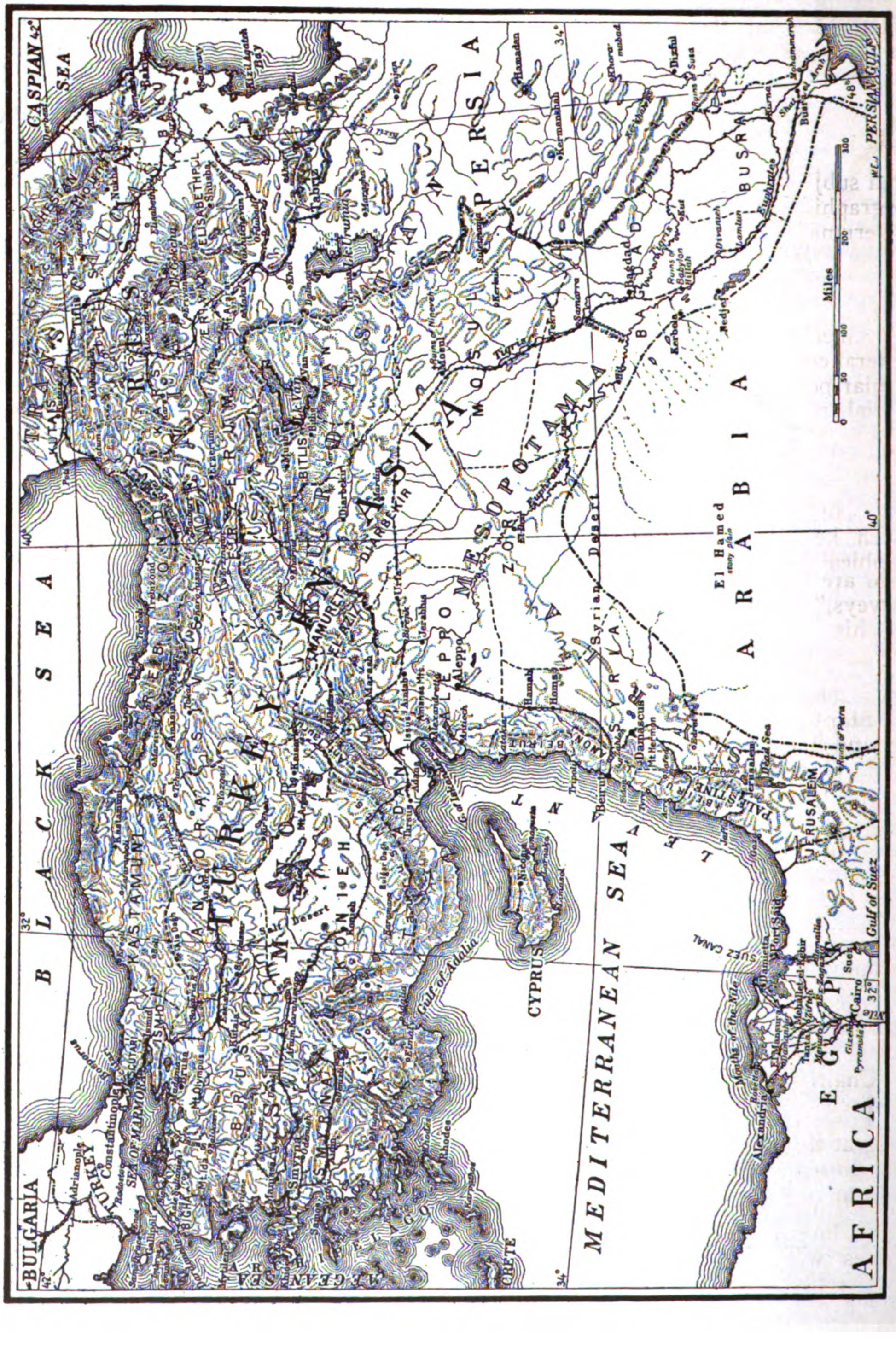
Dr. Gannett served as the secretary of the meeting which organized the National Geographic Society and played an important rôle in its history, culminating in the Chairmanship of its Committee on Research and the Presidency of the Society, both of which positions he was filling at the time of his death.

It remains to speak of Henry Gannett the man. To those who knew him intimately, his personality stands out with rugged lines of strength, yoked with attributes which commanded admiration and affection. To the world at large his striking traits of character were only dimly revealed. It was always difficult, even for his intimates, to induce him to speak of his own work and achievements; he held a wholly inadequate idea of their permanent importance. He preferred to talk in appreciative terms of what his fellow-scientists were doing; he was modest and unassertive, even to a fault.

Profound in his convictions on all live questions, he was not given to controversy. He had a deep contempt for scientific charlatanism and an unerring instinct in its detection; but he never rushed to its exposure. His convictions were founded upon the thoroughness of his own researches, which was the key to his methods of work. Between him and those whose ideals were the same, there existed a kinship at once delightful and inspiring.

His memory will be gratefully cherished by many of the scientists now winning their spurs at the National Capital for the practical helpfulness which marked their personal relations. Quick to detect misdirected efforts in any of his younger associates, he was eager to point out any waste of time and energy, and to reveal out of his long experience the pathway which they could profitably follow. There are many among them who gladly acknowledge that his kindly counsels set their feet in the right ways. He seemed always to be thinking how he could help others—never how he could best help himself.

Such was Henry Gannett; spotless in private life, gentle, modest, helpful; without jealousies or enmities, eager to befriend, with a consuming love for his great science, an intense desire to promote and perfect it and a tireless industry to that end. There are not many like him in all these respects; and because such men are rare, and because those who knew Henry Gannett best know how rare a character he was, they welcome the opportunity to pay their unstinted tribute to the geographer, the statistician, and the man.


BLACK SEA
CASPIAN SEA
MEDITERRANEAN SEA
AEGEAN SEA
PERSIAN GULF
BULGARIA
TURKEY
Adrianople
Constantinople
SEA OF MARMORA
CRETE
AFRICA
EGYPT
Alexandria
Mouths of the Nile
Cairo
Gizeh
Pyramids
Suez
Gulf of Suez
SUEZ CANAL
Port Said
JERUSALEM
PALESTINE
Dead Sea
Damascus
Beirut
Tripoli
SYRIA
Syrian Desert
ARABIA
El Hamed
stony plain
ALEPPO
Aleppo
Antioch
Homs
Hama
ADANA
Adana
CYPRUS
Gulf of Adalia
Rhodes
SMYRNA
KONIA
ASIA MINOR
ANGORA
KASTAMUNI
TREBIZOND
Trebizond
SIVAS
ERZERUM
BITLIS
DIARBEKIR
MAMURET-UL-AZIZ
MOSUL
Mosul
MESOPOTAMIA
ZOR
BAGDAD
Bagdad
Ruins of Babylon
Hillah
Kerbela
Kut
BUSRA
Euphrates
Tigris
PERSIA
Hamadan
Kermanshah
Dizful
Susa
TRANSCAUCASIA
KUTAIS
ELISABETHPOL
BAKU
ERIVAN
TURKEY IN ASIA
Miles
0
50
100
200
300
32°
34°
36°
40°
42°
48°

OUTLINE MAP OF TURKEY IN ASIA

THE MOST HISTORIC LANDS ON EARTH

NO OTHER people possess lands of such wonderful historic interest as the Turks. Occupying a region only a third as great in area as the United States, they have yet a territory within whose boundaries the greatest, the most influential events in human history have occurred.

The Bible, with little exception, is an account of the doings of people who never got beyond what have hitherto been the confines of Turkey. From a single corner of the Ottoman Empire arose the Babylon that in its day all but ruled the world. From that same region envy and famine conspired to send the children of Abraham into Egypt, which until recently was embraced in the Empire of the Ottomans. Thence, as they marched back from Africa to Asia, through the Wilderness of Sin to the Promised Land, they never once set foot off of what came to be Turkish soil. And when the Star of Bethlehem arose it stood over a manger, on land that is now Turkish soil.

In Asia Minor once dwelt Crœsus, whose name to this day expresses the last degree of wealth. Here was Pergamus, whose library in its period was the finest in the world, making such demands for papyrus that Ptolemy was led to prohibit the exportation of that commodity from Egypt. Under the reign of the Cæsars, Asia Minor alone contained 500 populous cities, enriched with all the gifts of nature and adorned with all the refinements of art.

The civilization of the Hittites, whose lands finally were occupied by the hosts of Israel; the civilization of Tyre and Sidon, the greatest colonizers of ancient times; the civilization of Egypt, rival of Persia and Chaldea in the value of the heritage it bequeathed to the future; the civilization of Constantinople and the Byzantine Empire, in its day more gorgeous than any that had gone before—all found their home within the boundaries of what afterward came to be the land of the Turk. Mohammed, and the religion which bears his name, and now claims several hundred million adherents, were also born in the Ottoman Empire.

The greatest of these ancient empires was the Babylonian. The Babylonians built their civilization upon an irrigation ditch and made Babylonia a land teeming with people, the seat of magnificent cities, and the home of a world-conquering empire. Babylonia rivaled the Valley of the Nile in production. Every Greek traveler who wandered that way marveled at the luxuriousness of the crops of Mesopotamia. Even Herodotus hesitated to tell the story in its fulness lest the people for whom he wrote history might regard him as a nature faker. The hanging gardens of Babylon stirred the admiration of the travelers out of the west, so that they wrote them down as one of the seven wonders of the world. Nebuchadnezzar built them for his wife, Amytis, the beautiful Mede, to rescue her from her homesickness for her native Median hills.

King Sargon, though he lived at the dawn of history, reviewed his reign much as a President of the United States or a great European sovereign might review his official career. He tells us that he restored ancient ruined cities and colonized them; that he made barren tracts of land fertile; that he gave his nation a splendid system of reservoirs, dams, and canals; that he protected the needy from want, the weak from oppression, filled the nation's granaries with corn, brought down the high cost of living, and found new markets for the nation's products.

Babylon's fortifications are said to have had a circumference of 55 miles, the outer wall of which was 350 feet high and 85 feet thick. The palace of Sargon II covered about 25 acres, and its front was twice as long as that of the United States Capitol. Forty-eight great winged bulls guarded its entrances, and upon its walls were more than two miles of sculptured slabs telling the story of the king's reign.

MEETINGS OF THE NATIONAL GEOGRAPHIC SOCIETY, 1914-1915

November 13.—"Belgium and Her People." By Dr. James Howard Gore, Professor Emeritus of George Washington University.

November 20.—"Conquest of the Great Rose and Other Glaciers of India." By Mrs. F. Bullock Workman and Dr. W. Hunter Workman.

November 27.—"The Strength and Virtues of the German People and Empire." By Roland G. Usher, Professor of History in Washington University, of St. Louis, author of "Pan-Germanism," etc.

December 4.—"France, Our Sister Republic." By Arthur S. Riggs.

December 11.—"Sunny Italy." By Mr. B. R. Baumgardt.

December 18.—"The Fringe of Asia." By Mrs. Harriet Chalmers Adams.

January 8, 1915, 4 p. m.—Hubbard Memorial Hall. Annual meeting of the National Geographic Society.

January 8.—"The Romance of Reclamation." By Mr. C. J. Blanchard. The "See America First Movement" will doubtless send hundreds of thousands of Americans to the beauty spots and wonderlands of the United States during the coming year. From the wonderful formations of Glacier National Park to the strange ruins of Casa Grande, New Mexico, and from the playgrounds of New England to the Golden Gate of California, there are scattered many of these places whose beauty and whose charm equal anything to be found in Europe and surpass the imaginations of those who have not seen them.

January 15.—"The Race with Death in Antarctic Blizzards." By Sir Douglas Mawson, K. B. D. Sc. B. E., leader of the Australasian Antarctic Expedition of 1911-1914.

January 22.—"Mohammedan Lands and Peoples." By Rev. Dr. Charles Wood.

January 26.—"England, the Oldest Nation of Europe." This subject of immeasurable interest will be dealt with by an authority whose study of England as the leader in the world's commerce, as well as the greatest colonizer of any time, will render it a most popular and valuable one.

January 29.—"Peoples, Places, and Problems in Mexico." By Prof. Leslie C. Wells, of Clark College.

February 5. — "The Balkans — Rumania, Servia, and Bulgaria." By Dr. Albert Bushnell Hart, Professor of History in Harvard University, author of "Practical Essays on American Government," "Obvious Orient," etc.

February 12.—"The Confederation of South Africa." By Hon. Chase S. Osborn, formerly Governor of Michigan, author of "The Andean Land."

February 16.—"Britain Beyond the Seas: Canada, Australia, New Zealand, and Other Colonies of the British Empire." The name of this speaker will be announced later.

February 19.—"Austria-Hungary, the Land of Contrasts." By E. M. Newman.

February 26.—"Japan Today." By Mr. Roy C. Andrews, of the American Museum of Natural History.

March 5.—"Driving Pests from the Globe: An Account of the Humanitarian Work of the International Health Commission, Founded by John D. Rockefeller." By Dr. Wycliffe Rose, Administrative Secretary.

March 12.—"The Chinese Republic." By Dr. Frank J. Goodnow, President of Johns Hopkins University, Legal Adviser to the Chinese Government 1913-1914.

March 16.—"The Flying Machine in Geographic Studies." By Mr. O. P. Austin.

March 19.—"Argentina and Chile; Comparisons and Contrasts of the Temperate Americas." By Mr. Bailey Willis, Consulting Geologist to the Minister of Public Works of Argentina 1911-1913.

March 23.—"Russia." This subject of great interest will be dealt with by an authority whose study of Russia will render it a most popular and valuable one.

March 26.—"My Visit to the Vatican." By Hon. William H. Taft, former President of the United States.

April 2.—"Brazil." By Anthony Fiala, member of the Roosevelt South American Expedition of 1913-1914.

April 16.—It is hoped that official engagements will permit Hon. Myron T. Herrick, Ambassador to France 1912-1914, to accept the invitation of the Society to address the Association during the course.

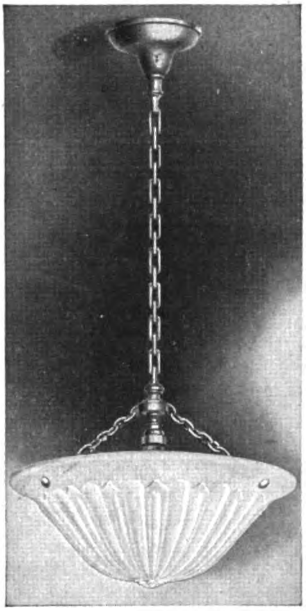
There will also be a lecture on "Holland and Her People" by Hon. David J. Hill, formerly United States Ambassador to Holland. The date of this lecture will be announced later.

Does your lighting pay you a profit?

Store owners expect every department, and every part of it, to earn a profit. Why not light?

Office managers look for a profit on every employe, every system, and every part of their equipment. Why not light?

Managers of all kinds of business and buildings — why not make profits from your light?



Alba Bowl with fixture: "It gets the most light out of your electricity and puts that light where it does the most good."

Alba Lighting Equipment

produces profit-making light. It gets the most light out of your electricity, puts that light where it does the most good, makes it thoroughly usable, makes your employes see better, feel better, work better; decreases sickness, absences, errors and waste; gives your customers a greater appreciation of your store, hotel, or restaurant; makes them stay longer, buy more and buy better.

Lighting Articles Free

When you know the facts, it is easy to get "Profit Making Light". The pamphlets listed below *tell the facts*. One or more of them will be sent free, on request, with a Portfolio of Individual Suggestions for *your particular* needs. Which are you interested in? — use the coupon.

Reg U S Pat Off

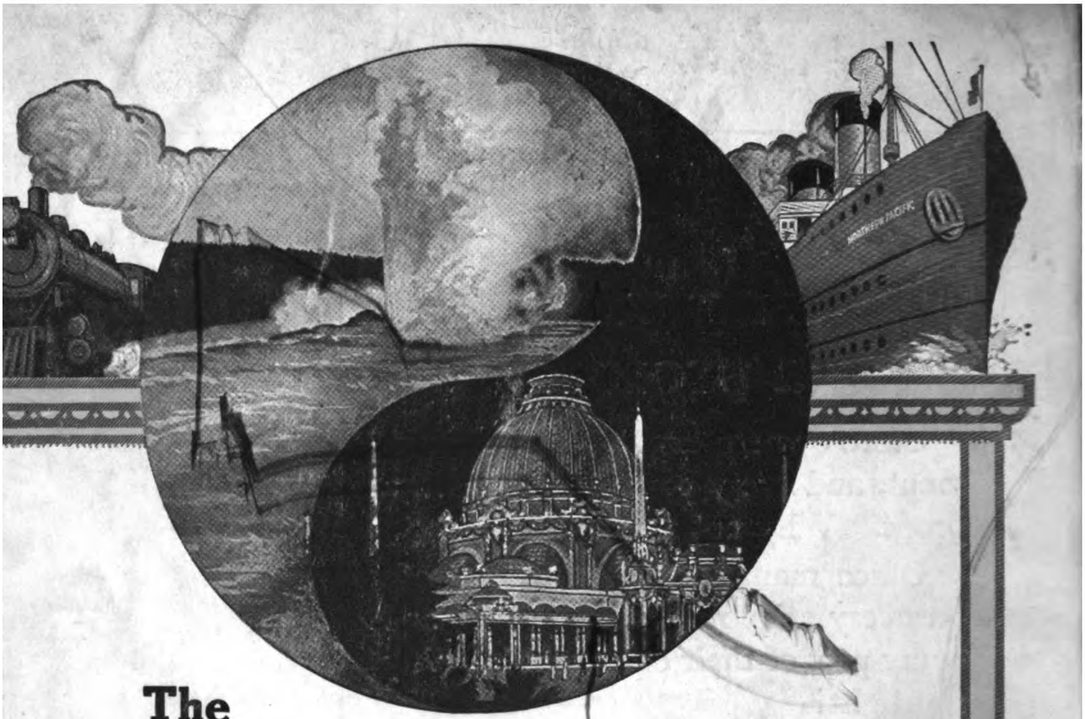
Macbeth-Evans Glass Company Pittsburgh

Sales and Showrooms also in New York, Chicago, Philadelphia, St Louis, Boston, Cincinnati
Cleveland, Dallas, San Francisco Macbeth-Evans Glass Co Ltd Toronto

TEAR OFF—CHECK SUBJECT—SIGN AND MAIL

Macbeth-Evans Glass Co., Pittsburgh: Send article on Good Light for subject checked and Portfolio of Individual Lighting Suggestions for my needs to name and address signed below: V-12-14

1—Homes
2—Department Stores
3—Restaurants
4—Stores
5—Offices
6—Clubs
7—Hotels
8—Banks
9—Theatres
10—Hospitals
11—Churches



The Northern Pacific Ry

and the

Great Northern Pacific Steamship Company

Link together man's latest achievement as exemplified in the Pacific Coast Expositions and Nature's greatest masterpiece

Yellowstone National Park

(Opens June 15—Closes September 15)

This constitutes a vacation trip—likewise an educational one, which, in point of variety and enjoyment cannot be duplicated. A journey half-way across the continent on the "NORTH COAST LIMITED" train through the STORIED NORTHWEST; a tour of YELLOWSTONE PARK—Nature's Unrivalled Wonderland; then by way of PUGET SOUND, Seattle and Tacoma, or, leaving Spokane, along the banks of the peerless COLUMBIA RIVER to Portland and Astoria and, thence, an ocean voyage on new and magnificent steamers through the Golden Gate to San Francisco and the Expositions—where can you equal it?

2,000 Miles of River, Lake and Ocean Scenery

See that your ticket is routed via

Northern Pacific Ry

With stopover at Yellowstone Park

A. M. CLELAND
General Passenger Agent, St. Paul, Minnesota

SEND FOR OUR EXPOSITIONS FOLDER

This book should be returned to the Library on or before the last date stamped below.

A fine is incurred by retaining it beyond the specified time.

Please return promptly.

NOV 24 '59 H

3 2044 105 211 601